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bulletin

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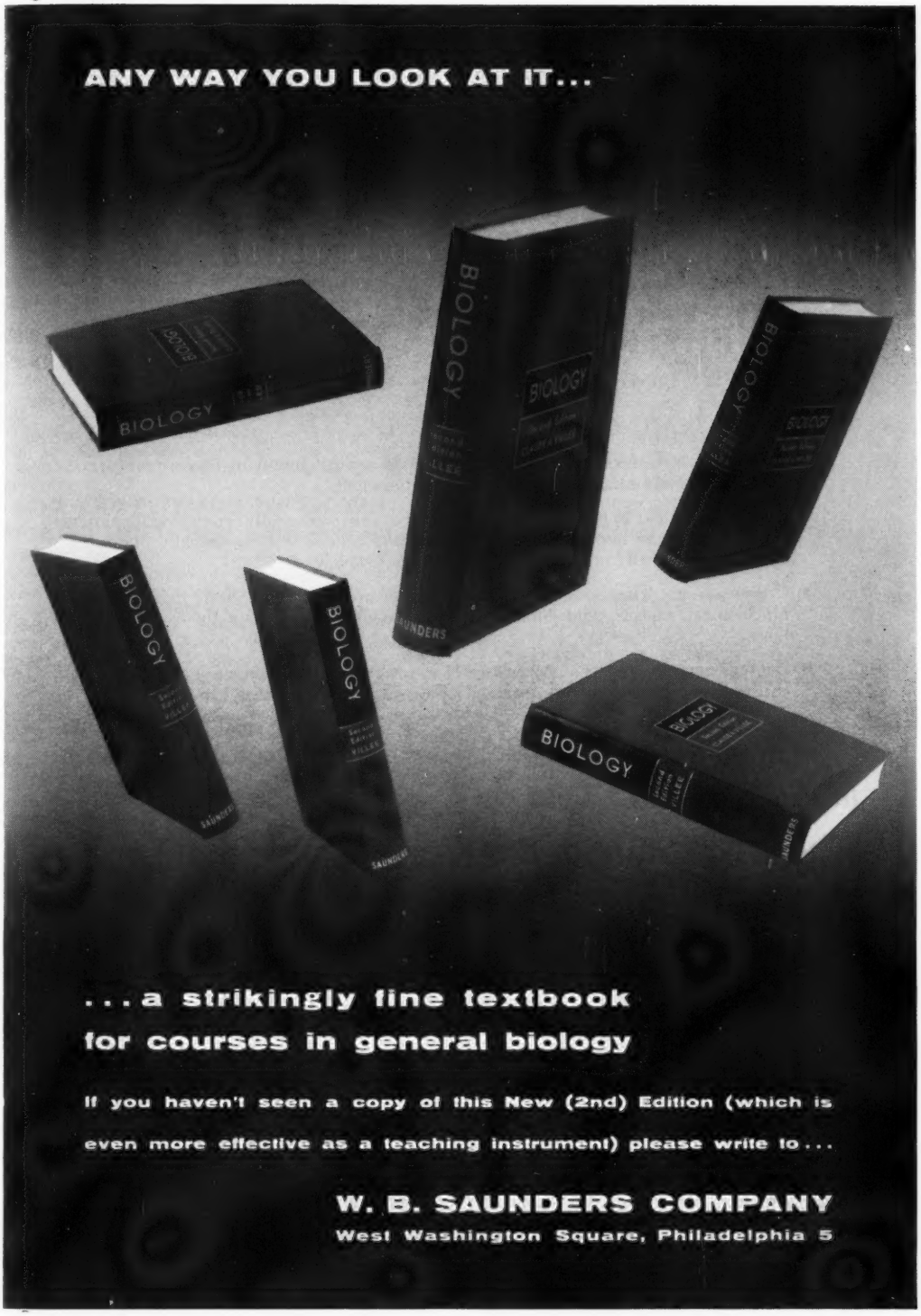
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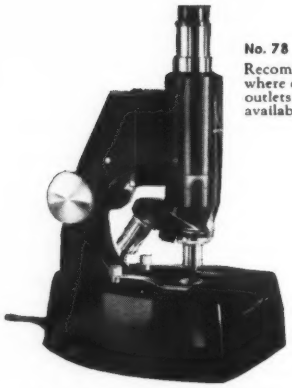

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General Information

1. THE UNIVERSITY OF FLORIDA

THE University of Florida, one of the South's leading educational institutions, was created in 1853 by an act of the Florida Legislature. Fifty-two years later the Buckman Act of 1905 called for the merging of several small State-supported colleges and their relocation in the City of Gainesville, situated midway between the Atlantic Ocean and the Gulf of Mexico. Now more than 1,800 acres of buildings, dormitories and research facilities, representing a $35½ million investment, stand on the site. The original enrollment of 136 has grown to more than 10,000 (beginning of 1953-54 school year) with over 3,000 freshmen annually and about 2,500 women students.

Under the able leadership of Acting President John S. Allen and the late President J. Hillis Miller, the University has enjoyed substantial progress from the time of Dr. Miller's appointment in 1947. Dr. Miller's predecessors, who also contributed effectively to the development of the University, were Dr. Andrew Sledd, Dr. Albert A. Murphree and Dr. John J. Tigert.

One of the more recent changes was the transition from an all male institution to one with a coeducational status. This was accomplished in 1947 by an act of Legislature. Since then courses more particularly suited to the needs of women students were introduced, housing facilities were provided and sororities and other women's organizations were established.

Coeducation denotes just one of the changes in the growth of the University. A continuous building program includes, under construction, a building for the College of Business Administration, a $2 million student dormitory, a teaching auditorium, a Century Tower and the Alumni Memorial Center. Also under construction is the first unit of the J. Hillis Miller Health Center, which will include schools of medicine, nursing, dentistry and medical technology, and will have a hospital and out-patients' clinic which will serve the entire state.

The academic life of the University is divided into eleven colleges and four schools. The Colleges include: University, Agriculture, Architecture and Allied Arts, Arts and Sciences, Business Administration, Education, Engineering, Law, Medicine, Pharmacy, and Physical Education and Health. The Schools are Journalism, Forestry, Inter-American Studies and Graduate School. The Division of Music, in addition to its training program gives about 600 concerts a year on campus and throughout the state, through their University of Florida Bands, Choral Union, Men's and Women's Glee Clubs, Symphony Orchestra, String Quartette and solo performances. The 5,000-watt radio voice of the University of Florida, WRUF-FM, offers opportunities for practical experience to those engaged in radio, speech, journalism, and dramatics.

Proving that the University is not entombed in ivory towers is the extensive research program which brings useful discoveries and developments to the state and the nation each year. During the war, work on the proximity fuse, the development and design of the Army's V-T Mortar fuse, and the development of 'Sferics equipment for storm location contributed much to the war effort. The 'Sferics research has resulted today in more advanced methods of locating and charting hurricanes. Recent fields of investigation include developments on cumic acid, a waste product of turpentine, plastic treatment to preserve flowers, aerial spray device, utilization of scrub oaks, R-G resistant type tobacco, watermelon seed extractor, and contributions to the tung nut drier. Continuous research is carried on in the 14 Agricultural Experiment Stations throughout the state. Outstanding contributions have been made to Florida's economy in beef cattle raising, and in growing of tobacco, vegetable produce, flowers and citrus. The Cancer Research Laboratory of the University, with the cooperation and assistance of the Damon Runyon Cancer Fund, the U. S. Public Health Service and the State Health Department, as well as private and state institutions and individuals, is carrying on several projects in the cause, diagnosis and treatment of cancer. Since Florida is already a mecca for older people who come to the state to retire, the University, through its annual conferences on gerontology, is considering the problems that make for health, and the better welfare of these people.

The biological sciences are strong at the University of Florida. Besides the extensive programs of teaching and research in agriculture, there is considerable activity in the non-applied biological fields. The Department of Biology, teaching upper division courses, and the Department of Biological Sciences, responsible for the introductory comprehensive course, have a combined staff of 27 full-time teaching faculty. Other departments of the University involved in non-applied phases of biological instruction or research include: Department of Botany, Department of Bacteriology, and the Florida State Museum. The University of Florida Press publishes a Biological Science series which is an outlet for book-length scholarly manuscripts in the biological sciences. Nine books have so far been published in this series.

Among off-Campus facilities associated with the biological sciences are the fourteen branch and field stations of the Agricultural Experiment Station which are located throughout the state. These range from the Sub-Tropical station at Homestead, concerned with the cultivation of pineapples, papayas, and limes, to the West Florida station at Jay, involved in studies of corn, pastures, and peanuts. The Department of Biology and the College of Agriculture jointly maintain the University Conservation Reserve at Welaka on the St. Johns River. Here living and laboratory facilities are at the disposal of students, staff, and visiting investigators. The marine laboratory of the Department of Biology is under construction on Sea Horse Key in the Gulf of Mexico, near the town of Cedar Keys. The most productive fossil Miocene deposits that have so far been discovered east of the the Mississippi River are in a farm in Gilchrist County. This property is now owned by the University and the dig is being exploited cooperatively with the Museum of Comparative Zoology of Harvard University. The School of Forestry has a memorial forest at Lake Mize, about ten miles northeast of Gainesville, and a Forest Ranger School at Lake City.

Students take an active part in campus affairs. Officers of student government and editors of the four publications are elected each year. The latter are *The Alligator*, weekly newspaper; *The Seminole*, yearbook; *The Orange Peel*, literary magazine and the *F Book*, freshman orientation booklet. Extracurricular affairs are numerous. Among the important social affairs on campus are the Frolics, Home-coming and Military Ball. There are 26 national fraternities and 11 sororities on campus. In intercollegiate athletics, Florida plays an important role as a member of the Southeastern Conference.

In 1953 the University celebrated its Centennial. Its growth from the humble beginnings of the East Florida Seminary, to its present position as the largest institution of higher learning in the Southeast, gives some indication of the progress that has been made in higher education in the State of Florida.

2. HOUSING FACILITIES

Permanent domitory accommodations of the University of Florida campus will be used for the convention period. Georgia Seagle Hall, a dormitory operated by the Methodist Church, has been reserved for Negro delegates. This building will be under the supervision of the University Division of Housing, as are all other dormitories. In addition, hotels and motels in the area are holding space for convention delegates. For reservations of any type, please contact: **D. W. Vermilye, Director, Division of Housing, Department "A," University of Florida, Gainesville, Florida.**

The cost of dormitory housing will be $2.25 per night per person, payable at the time of registration. The University will be unable to refund any portion of this housing charge.

Dormitory rooms may be occupied from noon Sunday, September 5, until noon, Thursday, September 9. Special arrangements for occupying dormitory rooms before the convention period have been made for Societies holding forays or special meetings. Reservations will be accepted until August 20; cancellations until September 3.

Registration and assignment of dormitory rooms will take place in Broward Hall, which is located in the southeast section of the University Campus on Inner Drive. Room assignment will be made upon presentation of registration confirmation cards and payment of registration and housing fees. The registration desk will be in operation from Saturday afternoon, September 4 through Monday evening, September 6.

Special registration desks will be open in Broward Hall for those persons arriving early for field trips.

Camping sites will be available on the shores of Lake Wauburg, the University Recreation Area, 8 miles from the campus. $1.50 per site per night will be charged. For further information please contact the Housing Director (see above).

3. REGISTRATION AND INFORMATION CENTERS

Registration will take place in the main lobby of Broward Hall. The desks will be open from Saturday afternoon, September 4 through Monday evening, September 6. Upon registration your convention badge will be issued: this is the official receipt for your registration fee ($3.00) and should be worn at all times. After registration you will receive your room assignment in a dormitory, hotel, motel, etc., from the University housing officials.

Special registration desks will be open in Broward Hall for those persons arriving early for field trips.

An Information Center will be maintained throughout the convention in the main lobby of Broward Hall. The visible index, containing the names of all persons registered, will be available for inspection in the West Lounge (first floor) of Broward Hall. All mail, telephone messages and telegrams will be placed in alphabetically arranged mail boxes in the lobby area of Broward Hall.

The A.I.B.S. Office will be located on the south side of the main lobby and someone will be in attendance until 6:00 p.m. each day to assist delegates and societies.

4. EATING FACILITIES

The following eating facilities will be open for meals during the convention.

Main Cafeteria	7:00 a.m. to 10:00 p.m.
Campus Club	7:00 a.m. to 10:00 p.m.
Student Service Center	7:00 a.m. to 10:00 p.m.
Coed Club (Broward Hall)	7:00 a.m. to 10:00 p.m. (except Wednesday, September 8th. Closed at 7:30 p.m.)
Breakfast hours	7:00-8:30 a.m.
Luncheon hours	11:30-1:00 p.m.
Dinner hours	5:30-7:00 p.m.

The City of Gainesville is situated in a "dry" county, therefore, only beer may be purchased locally.

5. BANQUETS AND SPECIAL MEALS

Sunday, September 5

Tea: 4:00 p.m. Sponsored by the *American Institute of Biological Sciences;* and arranged by the University of Florida Faculty Women. East Lounge, Broward Hall.

Dinner: 6:30 p.m. *American Society for Horticultural Science, Executive Committee.* Oak Room, Florida Union.

Monday, September 6

Breakfast: 8:00 a.m. *American Bryological Society.* Oak Room, Florida Union.

Luncheon: 12:00 noon. *Phycological Society of America.* Oak Room, Florida Union.

Luncheon: 12:00 noon. *Society for Industrial Microbiology.* Student Service Center.

Luncheon: 12:00 noon. *Nature Conservancy.* Social Room, Florida Union.

Dinner: 6:30 p.m. *American Society of Plant Physiologists.* Student Service Center.

Dinner: 6:30 p.m. *Phi Sigma.* Primrose Grill, Gainesville.

Dinner: 6:30 p.m. *Ecological Society of America.* Social Room, Florida Union.

Dinner: 6:30 p.m. *Society of Protozoologists.* Oak Room, Florida Union.

Tuesday, September 7

Breakfast: 8:00 a.m. *Society of Systematic Zoology.* Oak Room, Florida Union.

Breakfast: 8:00 a.m. *Association of Southeastern Biologists.* Student Service Center.

Breakfast: 8:00 a.m. *American Society for Horticultural Science.* Social Room, Florida Union.

Luncheon: 12:00 noon. *Albertus Magnus Guild.* Oak Room, Florida Union.

Luncheon: 12:00 noon. *Sigma Delta Epsilon.* Social Room, Florida Union.

Luncheon: 12:00 noon. *University of Chicago Botany Alumni.* Florida Room, P. K. Yonge Cafeteria.

Luncheon: 12:00 noon. *Genetics Society of America.* Student Service Center.

Luncheon: 12:00 noon. *Animal Behaviorists. Ecological Society of America.* Special Section, University Cafeteria.

Tea: 4:00 p.m. *Sigma Delta Epsilon.* Bryan Lounge, Florida Union.

Dinner: 6:30 p.m. *American Society of Human Genetics.* Primrose Grill, Gainesville.

Dinner: 6:30 p.m. *American Society of Plant Taxonomists.* Social Room, Florida Union.

Dinner: 6:30 p.m. *American Society for Horticultural Science.* Student Service Center.

Dinner: 6:30 p.m. *American Society of Ichthyologists and Herpetologists.* Country Club.

Wednesday, September 8

Breakfast: 8:00 a.m. *Sigma Delta Epsilon.* Social Room. Florida Union.

Luncheon: 12:00 noon. *National Association of Biology Teachers.* Oak Room, Florida Union.

Luncheon: 12:00 noon. *Society of Protozoologists.* Student Service Center.

Luncheon: 12:00 noon. *Ecological Society of America.* Section of the Cafeteria.

Dinner: 6:30 p.m. *Society for Industrial Microbiology.* Social Room, Florida Union.

Dinner: 6:30 p.m. *Botanical Society of America.* Student Service Center.

Tickets for all Society banquets, luncheons and special meals will be on sale in the main lobby of Broward Hall during registration, Sunday and Monday, September 5 and 6. Please purchase tickets at this place and time.

6. TRANSPORTATION FACILITIES

Trains. The Atlantic Coast Line serves Gainesville from the north and south. The Seaboard Air Line Railroad also arrives from the north and south but passengers must detrain at Waldo, Florida, 12 miles from Gainesville. Special buses will meet all trains at Waldo during the convention period.

Planes. Eastern Airlines is the only airline servicing Gainesville proper. The company is prepared to offer increased service prior to and following the convention period. All interested are requested to have their local agent consult the Jacksonville, Florida office for information about this additional service.

Delta-C. & S. flies into Jacksonville, as does Southern Airways and National Airlines. Connections may be made from Jacksonville via Eastern Airlines.

Bus. Florida Greyhound maintains service into Gainesville. Consult local agent for schedules.

Auto. Gainesville may be reached by car via: U. S. 441 from the north and south; U. S. 301 from the north; Fla. 26, 27 from the north and west; Fla. 24 from the north; Fla. 20 from the east.

On-campus parking will be no problem since a large number of parking areas are available close to dormitories and classrooms.

University vehicles will meet all trains and planes on Sunday, September 5th, whether in Gainesville or Waldo. Transportation will also be available on compus between Broward Hall, where registration will take place, and the dormitories. Taxis are available within Gainesville (average fare, 25¢ within the city limits) as well as a jitney service along the main streets.

7. TELEPHONES

To make outside calls from the campus, dial 9.
To reach the campus from outside, dial 3261.

Off-campus numbers.

(1) Long distance, Operator.
(2) Information, 113.
(3) Atlantic Coast Line, 8541.
(4) Seaboard Air Line Railroad, 2-1000.
(5) Eastern Airlines, 2-4224.
(6) Greyhound Bus Depot, 5252.
(7) Western Union, 5311.
(8) Taxis—De Luxe, 3241; Safety, 2-1444; Star Economy, 6411.
(9) McCollum's Drug Store (open evenings), 5356.
(10) Dental Services, 8193, 6330, 2-4938.

On-campus numbers.

(1) A.I.B.S. Office, ask operator.
(2) Information Desk (Broward Hall), ask operator.
(3) Registration Desk (Broward Hall), ask operator.
(4) Press Room (Broward Hall), ask operator.
(5) Placement Service (Broward Hall), ask operator.
(6) Chairman, Local Committee. Arnold B. Grobman, 2-1451.
(7) Dormitories, ask operator.
(8) Housing Director's Office, 246.
(9) University Infirmary. Call for all medical care, 371.
(10) Camp Wauberg, Micanopy 2711.

8. FIELD TRIPS

Sixteen field trips have been completely or tentatively planned in connection with the Gainesville meetings. The means of transportation and cost will depend upon the number of persons taking part. Last date noted is final date for reservations. Any person attending the meetings may take part in the field trips by contacting the leader listed.

All those arriving for field trips before Sunday, September 5, should notify John H. Davis, Department of Botany, University of Florida, if they wish housing in a dormitory. Give name, institution, time of arrival, trip planned, and other persons if a party. Housing, registration and departure of busses, unless otherwise indicated, will be at Broward Hall. All requests for housing reservations must be received in Gainesville before September 1. For trips starting at Florida State University, please notify the leader there.

A. *Trips Starting at Gainesville*

1. Southern Florida, Miami, Everglades Park, and Keys region. 4 days, 3 nights; Sept. 2-5. To Miami via Lakeland, Sebring, the Everglades; return via Atlantic coast, Orlando. Two days at the University of Miami and 3 trips each day from there. *Ecological Society*, J. H. Davis, Dept. of Botany, University of Florida, Gainesville. Place on bus available only if cancellations occur.
2. Commercial citrus and vegetable production and processing; ornamental nurseries and gardens; subtropical fruit plantings and sugar cane production and processing. 3 days, 2 nights; Sept. 2-4, by bus. *American Society for Horticultural Science*, F. S. Jamison, Agricultural Experiment Station, University of Florida, Gainesville. August 20.
3. Near Gainesville, Magnesia Springs, Gulf Hammock, Buzzards Roost. One trip each day. Sept. 3, 4, 5. *Mycological Society*, Erdman West, Agricultural Experiment Station, University of Florida, Gainesville. August 25.
4. Ocala National Forest. One day, Sept. 4. *American Society of Plant Taxonomists*, Lillian Arnold, Herbarium, Agricultural Experiment Station, University of Florida, Gainesville. August 15.
5. Aquatic Localities. Silver Springs, Orange Springs, Marineland. One day, Sept. 5. *American Society of Limnology and Oceanography*, H. T. Odum, Department of Biology, University of Florida, Gainesville. Sept. 1.
6. Near Gainesville, Newnan's Lake, Devil's Millhopper, morning and afternoon, Sept. 5. *American Society of Plant Taxonomists*, Lillian Arnold, Herbarium, Agricultural Experiment Station, University of Florida, Gainesville. August 15.
7. Silver Springs, Ross Allen Reptile Institute. Afternoon, Sept. 5. *American Society of Ichthyologists and Herpetologists*, W. A. Auffenberg, Department of Biology, University of Florida, Gainesville. August 15.
8. Juniper Springs in Ocala National Forest. One day, September 5. *American Bryological Society*, Ruth S. Breen, Department of Botany, Florida State University, Tallahassee. August 25.
9. Near Gainesville. Afternoon, Sept. 7. *National Association of Biology Teachers*, N. E. Bingham, College of Education, University of Florida, Gainesville. Sept. 6.
10. Fresh Water Habitats south of Gainesville, Rainbow Springs, Crystal River, Homosassa Springs. One day, Sept. 8. *Phycological Society*, L. A. Whitford, Department of Botany, N. C. State College, Raleigh, N. C. August 25.
11. Yerkes Primate Laboratory, Orange Park. One day, Sept. 8. Animal Behavior Section of *Ecological Society*, J. P. Scott, Jackson Memorial Laboratory, Bar Harbor, Maine. August 25.
12. Near Gainesville and south. One trip each day, Sept. 8, 9. *American Fern Society*, John Beckner, 736 Myrtle Way South, St. Petersburg, Florida. August 15.

B. *Trips Starting at Tallahassee*

13. Alligator Harbor Marine Laboratory of Florida State University. 5 days, Sept. 1-5. Boats and facilities available. *Phycological Society*, H. J. Humm, Oceanographic

Institute, Florida State University, Tallahassee. August 25.

14. Apalachicola River Bluffs, Torreya State Park. One day, Sept. 3. *American Bryological Society*, Ruth S. Breen, Department of Botany, Florida State University, Tallahassee, August 25.

C. *Trips Starting at Miami*

15. Three regions south of Miami: Florida Keys, Everglades National Park, Coral Reefs. This is part of trip #1. Two days, Sept. 3, 4. *Ecological Society*, Taylor Alexander, Department of Botany, University of Miami, Coral Gables. August 15.
16. Southern Florida: to Gainesville via Clewiston, Ft. Meade, Tampa. 4 days, 3 nights. Sept. 1-5. *American Fern Society*, John Beckner, 736 Myrtle Way South, St. Petersburg, Florida. August 15.

Building J has been reserved for the use of persons collecting biological specimens. Plant presses, vasculums, jars, vials, etc., will NOT be provided but formalin and laboratory instruments will.

Rooms 101 and 201, Building J, have been reserved for the use of all plant scientists and will be under the supervision of the Mycological Society. Room 202, Building J, has been reserved for the preparation of zoological material and will be under the supervision of the American Society of Ichthyologists and Herpetologists.

9. PLACES OF INTEREST, APPROACHING GAINESVILLE

Entering Florida by the following U.S. highway routes.

#1 or #301—Okefenokee Swamp, Wildlife Refuge, enter from Folkston, Georgia. Allow half-day.

#17—Fort Clinch State Park, take State #200 at Yulee to Fernandina Beach and then to the park. Old fort. Allow two hours.

#441—Okefenokee Swamp, enter from Fargo, Georgia, allow half-day.

#441—Stephen Foster Memorial Park and Museum. At Lake City take #41 north 13 miles to White Springs, Suwannee River, fine dioramas portraying Foster's music.

#41—Stephen Foster Memorial at White Springs. About 55 miles south of Valdosta.

#90—Marianna, and Florida Caverns State Park, north of city, side road. Fine caverns, good mesophytic hardwoods forest.

#90 or #27—Tallahassee, Capital of Florida. Florida State University, Florida Agricultural and Mechanical University.

#98 or #319—Wakulla Spring, St. Marks Wildlife Refuge, F.S.U. Oceanographic Institute at Alligator Harbor.

10. RECOMMENDED ONE-DAY TRIPS

Routes giving highway numbers, distances, places of interest. One bus for wives and families will travel Route 3, Wednesday, September 8.

(1) *Cedar Key, Gulf Hammock, Rainbow Springs.*

Gainesville to Cedar Key, southwest on State #24, 57 miles. Small port, salt marshes, mangroves, good sea food at Island Hotel. University of Florida Marine Laboratory on Sea Horse Key; by boat. Return east on #24 to Otter Creek, 22 miles, turn south on U.S. #19 to Lebanon Station, 14 miles; region of Gulf Hammock, game refuge, hardwoods and palm forests and swamps. Lebanon Station to Dunnellon on State #336, 14 miles. Turn north on U.S. #41 to road entrance to Rainbow Springs, 4 miles; large spring and river, beautiful underwater plants and animals, swimming and boating. Return to U.S. #41 and north to Archer via Williston, 31 miles. Archer east to Gainesville on State #24, 14 miles. Total 160 miles.

(2) *Ocala, Silver Springs, Daytona Beach, and return via Palatka.*

Gainesville south to Ocala, U.S. #441, 37 miles. Turn east, State #40 to Silver Springs, 7 miles; large spring and river, beautiful underwater plants and animals, swimming and boating. Ross Allen's Reptile Institute. Continue east State #40 to Barbersville, 40 miles. Turn south 14 miles on U.S. #17 to near Deland, east on U.S. #92 to Daytona Beach, 26 miles. Superb beach, swimming, auto speedway on beach. Return to Bunnell on U.S. #1, 24 miles, State #20 via Palatka to Gainesville, 81 miles. Total 235 miles.

(3) *St. Augustine, Marineland.*

Gainesville to Palatka, east on State #20, junction with U.S. 17 across St. John's River, 49 miles. Turn northeast on State #207 to St. Augustine, 28 miles. Oldest continually inhabited city in U.S., many old buildings, especially the fort, Castillo de San Marcos. Take U.S. #A1A near beaches and via Fort Matanzas National Monument to the aquarium, Marineland, 20 miles. Marineland is the home of Marine Studios Aquarium, which has an admission charge, that will be reduced if persons have proper A.I.B.S. identification. Porpoises and other marine animals well exhibited. Return by same route, or continue south to Flagler Beach, west on State #11 to Bunnell, thence on State #20 via Palatka to Gainesville. Total 155 or 185 miles.

(4) *Lake and Citrus regions, and Orlando.*

Gainesville to Orlando via Ocala, Leesburg, Mt. Dora, on U.S. #441, 124 miles. Route through small resort cities, by many lakes and numerous citrus groves. Return, Orlando west State #50 to junction with U.S. #27, near Minneola, 27 miles. Turn north on U.S. #27 via Leesburg to Ocala, and U.S. #441 Ocala to Gainesville, 100 miles. Route through some of the finest citrus groves in Florida and over scenic hills and by lakes. Total 225 miles.

For further points of biological interest, see map pages 42-43.

11. RECREATIONAL FACILITIES NEAR GAINESVILLE

Glen Springs, a swimming pool fed by a cold spring. From the University go north on 13th street to NW 23rd Blvd., turn left and follow sign. The distance from the University is about 2 miles. From downtown Gainesville take the Glen Springs bus at the corner of Main Street and University Avenue.

Magnesia Springs, a cold spring, well equipped for children and adults, located about 13 miles from Gainesville. From the University go east on University Avenue to State Highway 20, proceed for 11¾ miles from the Court House, turn right on the dirt road and follow signs.

Golf: The Gainesville Golf and Country Club is located 1 mile west of the campus on the Newberry Road. Visitors must pay a $2.00 green fee unless sponsored by a member of the Club. The Golfview Bus may be taken anywhere on University Avenue.

Fishing: Newnan's Lake is 5 miles from Gainesville on the extension of East University Avenue. Several fishing camps are available.

12. PROGRAM FOR WIVES

Sunday Afternoon, September 5

4:00 **Tea,** sponsored by the American Institute of Biological Sciences and arranged by the University of Florida Faculty Women. *East Lounge, Broward Hall.*

Monday Morning, September 6

10:30-12:00 Coffee in the Garden of the President's Home, corner of West University and Newberry Road. A bus will leave the west entrance of Broward Hall at 10:30 a.m.

Monday Afternoon, September 6 through Thursday, September 9

1:00-7:00 p.m. Camp Wauburg will be open to A.I.B.S. members and their families. Camp Wauburg, owned by the University, is located 8 miles south of the campus on highway 441. Facilities include a large picnic area, recreational building, bath house, playground area for volley ball, horseshoes, badminton, softball and swimming, boating and fishing accommodations. A University bus will leave the west entrance of Broward Hall at 1:00 and 3:00 p.m. each day.

Tuesday Morning, September 7

9:00 A conducted bus trip to Silver Springs and Ocala will leave from the west entrance of Broward Hall. Silver Springs is one of the largest of the many clear water springs in Florida and perhaps the world. It is well known and attractive facilities are available, which include glass botton boats through which one may see the abundant underwater plant and animal life. Near the Spring is the interesting Ross Allen Reptile Institute. Arrangements for this conducted trip by bus may be made Sunday, September 5 and Monday, September 6 in the Lobby of Broward Hall.

Wednesday Morning, September 8

8:30 A conducted bus trip to St. Augustine and Marineland will leave from the west entrance of Broward Hall. St. Augustine, the oldest city in the United States, still contains many old buildings of historical and architectural interest, among which is the old Spanish Fort, known as Castillo de San Marcos. The tour will include visits to some of these places and continue along the beach road by old Fort Mantanzas to the modern aquarium, Marineland. At Marineland there are not only the famous porpoises, but also many other interesting forms of marine life. This trip will be a total of 200 miles and will require a full day. Arrangements must be made by noon Tuesday, September 7, in the Lobby of Broward Hall.

13. NURSERIES AND BABY SITTERS

The Gainesville Day Nurseries and the Negro Recreation Center will make available day care for children during the A.I.B.S. meetings. Parents interested in obtaining further information are asked to write to: D. W. Vermilye, Director, Division of Housing, Department "A," University of Florida, Gainesville. A list of Baby Sitters for evenings may be obtained at the Information Desk at the time of registration.

14. FLORIDA STATE MUSEUM

The Florida State Museum will remain open from 9:30 a.m. to 10:00 p.m. during the period of the A.I.B.S. meetings. The Museum, which is a department of the University, is located in the Seagle Building, a ten-story structure on University Avenue midway between the Campus and Downtown.

An open-house for A.I.B.S. members will be held on Tuesday evening, September 7, beginning at 8:30 p.m. A.I.B.S. members are invited at this time to visit not only the displays but the collections and offices as well. The Fish, Insect, and Herpetology collections are jointly maintained with the Department of Biology and are housed in Science Hall. The Bird, Mammal, Mollusk, and Paleontological collections are in the Seagle Building.

The Museum's Mobile Exhibits, featuring displays giving a panoramic history of the State, will be located on the Plaza in the middle of the Campus.

15. BIOLOGICAL SCIENCES EXHIBIT HALL

Traditionally one of the most interesting and worthwhile features of any A.I.B.S. meeting is the Exhibit Hall. Here will be found attractive displays of recently developed equipment, current textbooks in the life sciences, and many commercial products of importance to biologists. As an innovation, this 5th Annual Biological Sciences Exhibit will include selected non-commercal exhibits prepared by various University of Florida departments, the Armed Forces Medical Museum, and other organizations with an interest in biology.

The air-conditioned ground floor of Broward Hall will house the Exhibits. Adjacent to the A.I.B.S. offices, registration and information centers, the Exhibit Hall may be reached by either of the two stairways on the north side of the main lobby, or it may be entered directly from the terrace entrance on the south side of Broward Hall. Exhibit hours are as follows: Sunday, September 5, 12:00 noon to 9:00 p.m.; Monday, September 6, 9:00 a.m. to 6:00 p.m.; Tuesday, September 7, 9:00 a.m. to 6:00 p.m.; Wednesday, September 8, 12:00 noon to 11:00 p.m.

On Wednesday evening, the Biologists' Smoker will be held in the Exhibit Hall, the adjoining Snack Bar and Terrace.

Brochures describing and locating each display will be available at the Registration Desk and in the Exhibit Hall. Be sure to obtain one.

During the meetings, when arranging to meet with your friends, or when you have a few spare minutes, think of the Exhibit Hall. It's convenient—and COOL!

16. PRESS ROOM

The West Lounge, second floor, of Broward Hall has been reserved for the use of the Press during the convention. Representatives from leading Southeastern newspapers as well as national wire services and magazines are expected to be in attendance. The cooperation of all biologists is requested in promptly submitting press releases of their papers, when they receive the request from the University of Florida News Bureau. Each Society meeting at Gainesville has appointed a Press Representative who will be available to answer questions about the specialty that he represents. Some radio, and possibly TV, time will be allocated to reports and interviews with biologists attending the meetings.

17. A.I.B.S. PLACEMENT SERVICE

The A.I.B.S. Placement Service will occupy the East Lounge, second floor, of Broward Hall. Registration of candidates for employment will begin at 12:00 noon on Sunday, September 5 and continue until Wednesday noon, September 8. Prospective employers may begin registration on Monday, September 6 at 9:00 a.m. Registration of candidates and employers will be free of charge upon presentation of a convention badge. Registrants are entitled to the interview services of the Placement Service for the duration of the convention. The data on all biologists registered in the last (June 1954) regular Placement Service list will be available, also, for the use of employers. A competent staff will be on hand to register biologists and arrange interviews with employers. Hours will be: Sunday: 12:00 noon to 6:00 p.m.; Monday: 9:00 a.m. to 6:00 p.m.; Tuesday: 9:00 a.m. to 6:00 p.m.; Wednesday: 9:00 a.m. to 3:00 p.m.

18. A.I.B.S. ACTIVITIES

Sunday Afternoon, September 5

Tea will be served from 4:00 to 6:00 p.m. in the ***East Lounge, first floor, of Broward Hall*** for all delegates to the convention.

Monday Noon, September 6

12:30 **A.I.B.S. Governing Board Luncheon. Green Room, Hotel Thomas.**

Monday Evening, September 6

9:00 **General Meeting for All Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, will preside. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

Tuesday Afternoon, September 7

2:00 **Symposium,** sponsored by the A.I.B.S. Publications Committee. **"The Communication of Research Results."** ***Room 207, Administration Building.*** JAMES BONNER, presiding.

a. WILLIAM DURYEE, National Cancer Institute, Washington, D. C. and Chairman, A.I.B.S. Publications Committee.
Introduction: A Blueprint for Streamlining Biological Journal Publication.
Tidal Wave swamping of libraries with almost 20,000 expensive journals in the field of the biological sciences necessitates a search for speedier, more efficient and less expensive systems of disseminating research results. It is proposed that A.I.B.S. devise and develop a new plan and encourage search for new methods of storing and transmitting knowledge. Maximum use of existing professional societies and editorial boards must be made, but it is essential to reduce publication in journal form, printing short papers only. The bulky material should be key indexed and editorially deposited in say five regional libraries coordinated by the Library of Congress. A *single* indexing and abstracting system should be the prime objective. A secondary objective is a cheap form of photo reproduction of deposited material to be issued only on demand, with the user paying the cost. It is estimated that six to ten years will be necessary to plan, develop and implement such a system.

b. RICHARD M. HEWITT, Division of Publications, Mayo Clinic and Assistant Professor, Mayo Foundation.
Better Preparation of Material.
The topic assigned necessitates consideration of the manuscript. It is proposed, therefore, to present certain tricks of the trade which the professional expositor uses in preparation of his manuscripts and to emphasize or illustrate these devices by quotations from the work of eminent expositors. Although these masters wrote with serious purpose, the shafts of their instruction sometimes were pointed with wit and it is intended, for quotation, rather to welcome than to reject such passages.

c. ROBERT BRAY, Deputy Chief, Technical Information Division, Library of Congress, Washington, D. C.
Modern Reproduction of Material.
The manifold devices and methods for reproducing information visually can be classified in several ways depending upon the technique employed and the extent of distribution required. Photographic methods, archaic in the technical sense, are finding new applications in information systems and sheet film is challenging the prominence hitherto held by rolled film. In the fascimile field available devices range from portable desk-model, office copiers to electronic facsimile transmitters capable of delivering copy over great distances. Closed circuit television, pioneered for industrial applications, is expanding into research, including microscopy. Many devices still in the developmental or experimental stage are expensive, unproven and unfamiliar. A studied approach should be made to every situation requiring the reproduction of research material, giving careful consideration to the preparation of materials, the method to be used, and the purpose to be served. The answer may lie in a new device or method or it may be found in a tailor-made system, no part of which is new. This paper describes several photographic and electronic devices and outlines examples of special documentary reproduction systems.

d. RALPH SHAW, Librarian, U. S. Department of Agriculture, Washington, D. C.
Indexing and Rapid Differential Selecting of Material.
Description of an electronic machine for storage, searching and reproduction of scientific data. The Rapid Selector stores data on microfilm. Along with each page of data is subject analysis in the form of dot code patterns. The machine photoelectrically matches the dots on the film with holes in a mask, and when the dots and holes match, copies the pertinent frame of data by flash photography. The prototype, which is the only machine of its type in existence, may be seen at the Department of Agriculture Library in Washington, D. C.

e. RALPH CLELAND, Dean of Graduate School, Indiana University, Bloomington, Indiana.
The Use of Material.
The flood of scientific literature which threatens to engulf us arises from the urge for professional advancement plus a desire to make the results of research available and useful to others. If papers are not read by one's colleagues, neither objective is achieved. What can scientists do to ensure that their contributions will be read? The way in which a paper is written, the kind of journal in which it is published, the method of reprint distribution are among the factors which affect the extent to which a publication is read. Enlightened self-interest, as well as the welfare of a society which depends for much of its well-being on science, both suggest the importance of placing more emphasis upon the problem of making scientific contributions more acceptable to the intended consumer.

Wednesday Evening, September 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

The Advertisers in this Program are biological specialists. When ordering, remember their names . . . and mention the *A.I.B.S. Bulletin.*

1. THE AMERICAN BRYOLOGICAL SOCIETY

The American Bryological Society was organized in 1898 upon the initiative of Dr. A. J. Grout and Mrs. Elizabeth G. Knight Britton. At first the Society was called the Sullivant Moss Chapter of the Agassiz Association, the name honoring William Starling Sullivant, pioneer student of American mosses. In 1908 the name was changed to The Sullivant Moss Society. At the completion of its first half century, the Society took its present name, and volume 50 of its journal, *The Bryologist*, was a special double volume dedicated to Dr. Grout. From its inception the Society has concerned itself with liverworts and lichens as well as mosses. The Society maintains reference herbaria and exchange services, and organizes an annual Foray for field study. Membership is open to all those who are interested, and includes a subscription to *The Bryologist*, official quarterly publication of the Society. Total membership, 403.

President: WINONA H. WELCH, DePauw University, Greencastle, Ind.
Vice-President: RUTH SCHORNHERST BREEN, Florida State University, Tallahassee, Fla.
Secretary-Treasurer: L. J. GIER, William Jewell College, Liberty, Missouri.
Representative on the Governing Board, A.I.B.S.: PAUL M. PATTERSON, Hollins College, Va.
Local Committee Representative: RUTH S. BREEN (FSU).

FRIDAY MORNING, SEPTEMBER 3

8:00 **Tallahassee Field Trip** to the *Torreya* region, Apalachicola River Bluffs. Group will leave from front entrance of the History Building, Florida State University, Tallahassee. Reservations, transportation, and lunch must be arranged for in advance by writing to Ruth S. Breen, Dept. of Botany, Florida State University, Tallahassee. (Reservations by September 1).

SATURDAY MORNING, SEPTEMBER 4

8:30 **The trip from Tallahassee to Gainesville** (160 miles) requires about four hours of driving time. Several interesting collecting places are on the main route: a Sabal palm hammock, a limestone spring, an old lime sink. Opportunity to collect at these places will be offered. Arrangements to be made in advance, as above.

SUNDAY MORNING, SEPTEMBER 5

8:30 **Field Trip from Gainesville** to Juniper Springs, Ocala National Forest (round trip about 200 miles). Assemble at Broward Hall, University of Florida. Return by 5:00. Opportunity to visit Silver Springs. Reservations as for Friday.

MONDAY MORNING, SEPTEMBER 6

8:00 **Bryologists' Breakfast.** ***Oak Room, Florida Union.***

9:00 **Annual Business Meeting,** American Bryological Society. ***Room 206, Administration Building.***

Session 1. Contributed papers. ***Room 206, Administration Building.***

10:00 *1.* FULFORD, MARGARET, University of Cincinnati, Cincinnati, Ohio. Some Sporeling Patterns in the Hepaticae. (Illustrated 2 x 2)

10:15 *2.* FISHER, FRANCINE, Citrus Experiment Station, Lake Alfred, Fla. Epiphyllous Hepatics on Citrus Leaves in Florida.

10:25 *3.* McGREGOR, RONALD L., University of Kansas, Lawrence, Kansas. The Distribution of the genus *Riccia* in North America. (Illustrated 3¼ x 4)

10:35 *4.* SCHUSTER, RUDOLF M., Duke University, Durham, N. C. The Problem of Tropical Hepaticae in Non-tropical Regions of the Southeastern United States. (Illustrated 2 x 2)

10:50-11:00 Rest period.

11:00 *5.* MOZINGO, HUGH NELSON, Florida Southern College, Lakeland, Fla. Lichen Studies in Eastern Tennessee. (Illustrated 2 x 2)

11:10 *6.* HALE, MASON E., University of Wichita, Wichita, Kansas. The Chemical Strain Concept in Lichenology. (Illustrated 2 x 2)

11:20 *7.* THOMPSON, JOHN W., University of Wisconsin, Madison, Wis. An Arctic-alpine Lichen Ranging into South America. (Illustrated 2 x 2)

11:30 *8.* HOLLIGER, H. H., Huron, Ohio. Polarized Light in the Photography of Mosses and Lichens.

MONDAY AFTERNOON, SEPTEMBER 6

Session 2. Contributed papers. ***Room 206, Administration Building.***

2:00 *9.* KOCH, LEO, Tulane University, New Orleans, La. Some Notes on Comparing the Mosses of California and Louisiana. (Illustrated 2 x 2)

2:10 *10.* SHARP, AARON J., University of Tennessee, Knoxville, Tenn. Geographical Relationships of the Bryophytes of the Southern Appalachian Fir Forests. (Illustrated 3¼ x 4)

2:20 *11.* IMSHAUG, HENRY A., University of Idaho, Moscow, Idaho. The Value of Lichens and Mosses in the Classification of Montane Vegetation in the Caribbean. (Illustrated 2 x 2)

2:35 *12.* STEERE, WILLIAM C., Stanford University, Stanford, Calif. The Continental Element of the West Indian Moss Flora. (Illustrated 2 x 2)

2:55 *13.* BREEN, RUTH SCHORNHERST, Florida State University, Tallahassee, Fla. The West Indian Element of the Florida Moss Flora.

3:05-3:15 Rest period.

3:15 *14.* QUARTERMAN, ELSIE, Vanderbilt University, Nashville, Tenn. Contributions to our Knowledge of *Pleurochaete squarrosa* on North America. (Illustrated 2 x 2)

3:25 *15.* GIER, L. J., William Jewell College, Liberty, Missouri. Missouri Bryophytes. (Illustrated 2 x 2)

3:30 *16.* WELCH, WINONA H., DePauw University, Greencastle, Ind. The Fontinalaceae.

3:40 *17.* LOWRY, ROBERT J., University of Michigan, Ann Arbor, Mich. Some Remarks on the Origin of the Moss Calyptra. (Illustrated 2 x 2)

3:50 *18.* ANDERSON, LEWIS E., Duke University, Durham, N. C. An Unusual Form of *Polytrichum gracile* Dicks from the Southern Appalachians. (Illustrated 3¼ x 4)

4:00 *19.* BRYAN, VIRGINIA S., Duke University, Durham, N. C. Chromosome Numbers of some Cleistocarpous and Gymnostomous Mosses. (Illustrated 3¼ x 4)

4:15 Reports of the Eighth International Botanical Congress, by members attending.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

2. THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE

The American Society for Horticultural Science was organized September 9, 1903, at Boston, Massachusetts, on the occasion of the twenty-eighth biennial session of the American Pomological Society. The objectives of the Society were to further horticultural investigations and teaching and to promote the science of horticulture. Sectional meetings include pomology, vegetable crops, floriculture, and ornamental horticulture and processing. Total membership 1,760.

President: F. P. CULLINAN, USDA Agricultural Research Service, Beltsville, Md.
Vice-President: E. S. HABER, Iowa State College, Ames, Iowa.
Sectional Chairmen:
Pomology: LEON HAVIS, U. S. Plant Industry Station, Beltsville, Md.
Vegetable Crops: J. D. HARTMAN, Cornell University, Ithaca, N. Y.
Floriculture and Ornamental Horticulture: CONRAD LINK, University of Maryland, College Park, Md.
Processing: W. A. GOULD, Ohio State University, Columbus, Ohio.
Secretary-Treasurer: FREEMAN S. HOWLETT, Ohio Agricultural Experiment Station, Wooster, Ohio.
Representative to the Governing Board, A.I.B.S.: F. P. CULLINAN, USDA Agricultural Research Service, Beltsville, Md.
Local Committee Representative: F. S. JAMISON.

Lounge, 3rd Floor East, Broward Hall, has been reserved for the use of the American Society for Horticultural Science for council and committee meetings during the convention.

THURSDAY TO SATURDAY, SEPTEMBER 2 TO 4

Field Trip, by bus. Will include representative citrus groves, packing houses, processing plants and express shippers; key vegetable ventures in muck and sand; ornamental developments such as gladiolus and chrysanthemum production, exotic plant collections, foliage plant production and landscape nurseries; tropical fruit planning; sugar cane production and processing; phosphate mining; special entertainment such as scenic drives, water ski show and several famous horticulture beauty spots. Reservations must be made by August 20th with F. S. Jamison, Agri. Exp. Station, University of Florida, Gainesville.

SUNDAY EVENING, SEPTEMBER 5

6:30 **Dinner Meeting of the Executive Committee.** ***Oak Room, Florida Union.***

MONDAY MORNING, SEPTEMBER 6

Concurrent Sections I, II, III

Section I. Cooperative Program of the National Joint Committee on Fertilizer Application and the American Society for Horticultural Science. ***Walker Auditorium.*** J. D. BARNARD, presiding.

9:30 Opening Remarks. GEORGE B. NUTT (Clemson Agricultural College), General Chairman, The National Joint Committee on Fertilizer Application.

9:45 *20.* TOWSON, A. LEE (Seabrook Farms Co.), President, Vegetable Grower's Association of America, Inc. Where Are We Going on Fertilizing Horticultural Crops?

10:30 *21.* KENWORTHY, A. L., Associate Professor of Horticulture, Michigan State College. What's New in Fertilizing Deciduous Fruits?

11:15 *22.* JACOB, K. D., Head, Section of Fertilizer and Agricultural Lime, USDA. Inclusion of Insecticides, Fungicides, and Herbicides in Fertilizer.

Section II. Pomology—Miscellaneous. ***Room 203, Anderson Hall.*** LEON HAVIS, presiding.

9:00 *23.* EL-TOMI, AHMED, and H. S. WOLFE, University of Florida, Gainesville. A Study of Some Responses of Florida Citrus Trees to Nitrogen Nutrition and Irrigation. (Illustrated 2 x 2)

9:15 *24.* KENWORTHY, A. L., E. J. BENNE, and RALPH BACON, Michigan State College, East Lansing, Mich. Nutrient-Element Composition of Delicious Apple Leaves from Several States. (Illustrated 2 x 2)

9:25 *25.* ROBERTS, R. H., University of Wisconsin, Madison, Wis. The Use of Stoddard Solvent in Weeding Cranberries. (Illustrated 3¼ x 4)

9:40 *26.* SITTON, B. G., W. A. LEWIS, and G. F. POTTER, U. S. Laboratories for Tung Investigations, Bogalusa, La. Chemical Control of Briars and Tung Seedlings in Tung Orchards. (Illustrated 2 x 2)

9:50 *27.* HENDERSHOTT, CHARLES H., JR., University of Arkansas, Fayetteville, Ark. Growth Inhibiting Substances in Extracts of Dormant Flower Buds of Peach. (Illustrated 2 x 2)

10:00 *28.* HATTON, THURMAN T., JR., North Carolina State College, Raleigh, N. C. Responses of the Common Delicious Apple to Sprays of 2, 4, 5-Trichlorophenoxyacetic Acid. (Illustrated 2 x 2)

10:15 *29.* KOM, TONY, and N. F. CHILDERS, Rutgers University, New Brunswick, N. J. Effects of Urea Sprays in Combination with Various Pesticides on Finish of Stayman Fruit. (Illustrated 2 x 2 and 3¼ x 4)

10:25 *30.* GOODMAN, ROBERT N., University of Missouri, Columbia, Missouri. Concentration and Timing of Antibiotic Sprays for Control of Fireblight of Apple. (Illustrated 2 x 2 and 3¼ x 4)

10:40 *31.* HAWTHORNE, P. L., and N. L. HORN, Louisiana State University, Baton Rouge, La. The Effect of Foliar Applications of Certain Antibiotics on Control of Bacterial Leaf Spot of Peaches. (Illustrated 2 x 2)

10:55 *31a.* HAMILTON, R. A., University of Hawaii, Honolulu, T. H. A Preliminary Report on the Effect of Crag Experimental Fungicide 974 on the Growth of Papaya Plants.

11:10 *31b.* HAMILTON, R. A., and W. B. STOREY, University of Hawaii, Honolulu, T. H. A Difference in Terminal Growth Rate between Female and Hermaphrodite Solo Papaya Plants.

Section III. Vegetable Crops—Varieties and Breeding. ***Room 209, Anderson Hall.*** JOHN D. HARTMAN, presiding.

9:00 *32.* DEMPSEY, WESLEY H., University of California, Davis, Calif. Inheritance of Consistency in Tomato Products. (Illustrated 2 x 2)

9:15 *33.* SNYDER, ROBERT J., Pennsylvania State University, State College, Pa. The Inheritance of Seed Weight in Tomato.

9:25 *34.* BROWN, WALTER N., Ohio State University, Columbus, Ohio. Acid Extraction of Tomato Seed, a Method for Tomato Breeders. (Illustrated 2 x 2)

9:35 *35.* JANICK, JULES, and E. C. STEVENSON, Purdue University, Lafayette, Ind. Environmental Influences on Sex Expression in Spinach. (Illustrated 2 x 2)

9:45 *36.* HUTCHISON, JOHN E., and LEE C. COFFEY, Texas A. & M. College, College Station, Tex. A Means of Introducing New Varieties of Horticultural Crops in Texas.

10:00 *37.* RICHARDSON, RALPH W., JR., The Rockefeller Foundation, Mexico 6, D. F., Mexico. Adaptability of Vegetable Varieties to Several Agricultural Regions in Mexico. (Illustrated 2 x 2 and 3¼ x 4)

10:10 *38.* RICHARDSON, RALPH W., JR., and ENRIQUE GUZMAN, The Rockefeller Foundation, Mexico 6, D. F., Mexico. Varietal Differences in Resistance to a Seed Rot of Peas in the Toluca Valley of Mexico. (Illustrated 2 x 2 and 3¼ x 4)

10:20 *39.* RICK, CHARLES M., and L. BUTLER, University of California, Davis, Calif., and University of Toronto, Toronto, Canada. The Linkage Relations of a Gene for Male Sterility and Applications in Tomato Breeding. (Illustrated 2 x 2)

10:30 *40.* RICK, CHARLES M., and ANAND C. SAWANT, University of California, Davis, Calif. Factor Interactions Affecting the Phenotypic Expression of the Jointless Character in Tomatoes. (Illustrated 2 x 2)

10:40 *41.* EIGSTI, ORIE J., Colchicine Research Foundation, Normal, Ill. Colchicine, Problems and Practices. (Illustrated 2 x 2)

MONDAY AFTERNOON, SEPTEMBER 6

Concurrent Sections I, II, III, IV, V

Section I. The National Joint Committee on Fertilizer Application. ***Room 207, Leigh Hall.*** GEORGE B. NUTT, presiding.

1:30 *42.* BECKENBACH, J. R., Associate Director, Florida Agricultural Experiment Station, Gainesville, Fla. How to Apply Trace Elements.

2:30 **Panel Discussion. How to Make Research Work in the Field.** CHARLES H. MAHONEY, Director of Raw Products Research Bureau, National Canners Association, Moderator.
J. D. BARNARD, Agricultural Research Consultant, Green Giant Company; H. G. GAUCH, Professor of Plant Physiology, University of Maryland; E. S. HABER, Head, Department of Horticulture, Iowa State College; J. A. RIGNEY, Head, Department of Statistics, North Carolina State College; M. T. VITTUM, Associate Professor of Vegetable Crops, New York State Agricultural Experiment Station.

4:00 **Fertilizer Application Equipment Exhibit and Demonstration.** ***Livestock Pavilion.***

Section II. Pomology—Varieties and Breeding Tree and Small Fruits. ***Room 201, Law Building.*** LEON HAVIS, presiding.

1:30 *43.* WILLIAMS, CARLOS F., North Carolina Agricultural Experiment Station, Raleigh, N. C. Size of Fruit of Hermaphrodite and Pistillate Seedlings in Muscadine Grape Crosses. (Illustrated 2 x 2)

1:40 *44.* LEDIN, R. BRUCE, Sub-Tropical Experiment Station, University of Florida, Homestead, Fla. A Tropical Black Raspberry. (Illustrated 2 x 2)

1:50 *45.* BRIGHTWELL, W. T., O. J. WOODWARD, GEORGE M. DARROW, and D. H. SCOTT, Georgia Coastal Plains Experiment Station, Tifton, Ga., and Plant Industry Station, Beltsville, Md. Observations on Breeding Blueberries for the Southeast. (Illustrated 2 x 2)

2:00 *46.* YEAGER, A. F., and E. M. MEADER, University of New Hampshire, Durham, N. H. Some Unusual *Rubus* Hybrids. (Illustrated 2 x 2)

2:15 *47.* REIMER, FRANK C., 436 North Holly St., Medford, Oregon. Genetic Red Fruit Bud Mutations in Pears.

2:25 *48.* HAVIS, A. LEON, and A. L. TAYLOR, U. S. Plant Industry Station, Horticultural Crops Research Branch, Beltsville, Md. Breeding and Testing Peach Stocks for Nematode Resistance. (Illustrated 2 x 2)

2:35 *49.* CURTIS, O. F., JR., New York Agricultural Experiment Station, Geneva, N. Y. Juvenility as a Specific Factor in the Delayed Flowering of Seedling Apple Trees. (Illustrated 2 x 2)

2:45 *50.* KOLBE, MELVIN H., West Virginia University, Morgantown, W. Va. On-the-Farm Strawberry Variety Trials. (Illustrated 2 x 2)

Section III. Vegetable Crops—Breeding. ***Room 209, Anderson Hall.*** J. D. HARTMAN, presiding.

1:30 *51.* MOHR, HUBER C., Texas A. and M. College, College Station, Tex. Producing F_1 Hybrid Watermelons from Field-Pollinated Seed by Utilizing a Genetic Marker. (Illustrated 2 x 2 and 3¼ x 4)

1:45 *52.* BRAUER, OSCAR H., The Rockefeller Foundation, Mexico, D. F., Mexico. Correlation Studies on Leaf and Fruit Characteristics in *Capsicum frutescens* L. (Illustrated 2 x 2 and 3¼ x 4)

1:55 *53.* WESTER, ROBERT E., Plant Industry Station, USDA, Beltsville, Md. Effect of Downy Mildew on Resistant Lima Beans. (Illustrated 2 x 2)

2:05 *54.* HILLYER, IRVIN G., Michigan State College, East Lansing, Mich. Chemical Induction of Male Sterility in Cucurbits. (Illustrated 2 x 2)

2:15 *55.* BARNES, W. C., and W. M. EPPS, Clemson College Truck Station, Charleston, S. C. Progress in Breeding Cucumbers Resistant to Anthracnose. (Illustrated 2 x 2)

2:30 *56.* JONES, SAM T., and C. L. ISBELL, Alabama Polytechnic Institute, Auburn, Ala. Improvement of the Southern Pea with Respect to Plant Characteristics, Yield and Quality. (Illustrated 2 x 2)

2:45 *57.* HERNANDEZ, TEME P., JOHN J. MIKEL, and JULIAN C. MILLER, Louisiana State University, Baton Rouge, La. Preliminary Genetic Studies of the Sweet Potato. (Illustrated 2 x 2)

2:55 *58.* JOHNSTONE, F. E., JR., and GEORGE E. THOMPSON, University of Georgia, Athens, Ga. Results of Pedigree Selection Within Clonal Lines Porto Rico Type Sweet Potato. (Illustrated 2 x 2)

3:10 *59.* JONES, SAM T., and AUGUST E. KEHR, Louisiana State University, Baton Rouge, La. The Cytology and Breeding Behaviour of the Amphidiploid *Allium ascalonicum-histulosum* and its Backcross Progeny. (Illustrated 2 x 2)

Section IV. Processing—Tree Fruits. ***Room 16, Business Administration Building.*** W. A. GOULD, presiding.

1:30 *60.* TUKEY, H. B., Michigan State College, East Lansing, Mich. The Relation of Biology to Economics in the Handling and Marketing of Perishable Products.

1:45 *61.* ROOD, PAUL, U. S. Horticultural Field Station, USDA, Fresno, Calif. Development and Evaluation of Objective Maturity Indices for California Freestone Peaches. (Illustrated 2 x 2)

2:00 *62.* BIBI, ZUHAIR, and AMIHUD KRAMER, University of Maryland, College Park, Md. Methods of Determining the Suitability of Peach Varieties for Canning and Freezing.

2:15 *63.* DEWEESE, DUANE G., and W. A. GOULD, Ohio State University, Columbus, Ohio. Effect of Ripeness on Flavor, Texture, and Color of Raw and Frozen Elberta Peaches. (Illustrated 2 x 2 and 3¼ x 4)

2:30 *64.* CLAYPOOL, LAWRENCE L., and JOHN H. KILBUCK, University of California, Davis, Calif. Influence of Maturity of French Prunes on Quality of Dried Product. (Illustrated 2 x 2)

2:45 *65.* CLAYPOOL, LAWRENCE L., University of California, Davis, Calif. Maturity Studies with Bartlett Pears. (Illustrated 2 x 2)

3:00 *66.* PHILLIPS, W. R., B. J. RHEAUME, and P. A. POAPST, Canadian Experimental Farm, Ottawa, Ont. The Effect of Temperatures Near 32° F. on the Storage Behavior of Apples. (Illustrated 2 x 2)

3:15 *67.* KENNERLY, C. D., and W. A. GOULD, Ohio State University, Columbus, Ohio. The Effect of Variety on the Quality of Frozen Sliced Apples. (Illustrated 2 x 2 and 3¼ x 4)

3:30 *68.* COMIN, DONALD, Ohio Agri. Exp. Station, Wooster, Ohio. The Degree of Dissociation of Acids in the Rome Apple and its Relation to the Loss of Acid During Storage. (Illustrated 3¼ x 4)

Section V. Floriculture and Ornamental Horticulture—General Culture. ***Room 208, Administration Building.*** CONRAD LINK, presiding.

1:30 *69.* REISCH, KENNETH W., and L. C. CHADWICK, Ohio State University, Columbus, Ohio. Effects of Maleic Hydrazide on Growth and Shoot Development of Some Woody Ornamental Plants. (Illustrated 3¼ x 4)

1:40 *70.* SHANKS, JAMES B., JOHN R. KELLER, and CONRAD B. LINK, University of Maryland, College Park, Md. The Effects of Soil Acidity, Moisture Content, and Forcing Temperature on the Growth of Poinsettias and on the Incidence of Poinsettia Root Rot. (Illustrated 2 x 2)

1:55 *71.* LINK, CONRAD B., and JAMES B. SHANKS, University of Maryland, College Park, Md. Influence of Some Cultural Practices on Azalea Forcing.

2:05 *72.* BING, ARTHUR, Cornell-USDA Ornamentals Research Laboratory, Farmingdale, N. Y. Results of Three Years' Carnation Timing Experiments.

2:15 *73.* ANDREASEN, RICHARD C., Cornell University, Ithaca, N. Y. The Effects of Close Planting on Quantity and Quality of Carnations. (Illustrated 2 x 2)

2:25 *74.* ANDREASEN, RICHARD C., Cornell University, Ithaca, N. Y. Further Studies on the Correlation Between Redox Potentials of Various Growing Media and Flower Production of Greenhouse Roses. (Illustrated 2 x 2)

2:40 *75.* ROBERTS, R. H., and B. ESTER STRUCKMEYER, University of Wisconsin, Madison, Wis. Observations on the Growth and Flowering Habits of Better Times Rose. (Illustrated 2 x 2 and 3¼ x 4)

2:55 *76.* FOSSUM, M. TRUMAN, Agricultural Marketing Service, USDA, Washington, D. C. Trends in Floriculture and Ornamental Horticulture.

4:00 **Business Session** of the American Society for Horticultural Science. ***Room 207, Leigh Hall.***

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

8:00 **Breakfast for Extension Workers,** ***Social Room, Florida Union.*** C. R. CUNNINGHAM, presiding.

Concurrent Sections I, II, III, IV

Section I. Pomology—Nutrition of Deciduous Fruits. ***Room 207, Leigh Hall.*** LEON HAVIS, presiding.

9:00 *77.* CAIN, JOHN C., New York Agricultural Experiment Station, Geneva, N. Y. Effects of Potassium and Magnesium on Absorption and Tissue Concentration of Nutrients by Apple Trees in Sand Culture. (Illustrated 2 x 2)

9:15 *78.* SHANNON, LELAND, Rutgers University, New Brunswick, N. J. Internal Bark Necrosis of the Delicious Apple. (Illustrated 2 x 2 and 3¼ x 4)

9:30 *79.* FISHER, E. G., and D. R. WALKER, Cornell University, Ithaca, N. Y. The Apparent Absorption of Phosphorus and Magnesium by McIntosh Apple Leaves. (Illustrated 2 x 2)

9:45 *80.* EMMERT, FRED, University of Connecticut, Storrs, Conn. The Soluble and Total P, K, Ca, and Mg of Apple Leaves as Affected by Time and Place of Sampling. (Illustrated 2 x 2)

9:55 *81.* WALKER, DAVID R., and ELWOOD G. FISHER, Cornell University, Ithaca, N. Y. The Effects of Urea Sprays on Sour Cherry Trees. (Illustrated 2 x 2)

10:05 *82.* LANGER, CLARENCE A., Michigan State College, East Lansing, Mich. The Magnesium Problem in Michigan Orchards. (Illustrated 2 x 2 and 3¼ x 4)

10:20 *83.* KENWORTHY, A. L., Michigan State College, East Lansing, Mich. Referee Analysis of Fruit Tree Leaves. (Illustrated 2 x 2)

10:30 *84.* HERNANDEZ, ERNESTO, and N. F. CHILDERS, Rutgers University, New Brunswick, N. J. Further Studies of Response of Peach to Major and Trace Elements under Field Conditions. (Illustrated 2 x 2 and 3¼ x 4)

10:40 *85.* HANSON, KENNETH W., New York State Agricultural Experiment Station, Geneva, N. Y. Studies on the Magnesium Content of the Peach Tree at Various Seasons of the Year in Georgia.

10:55 *86.* MERRILL, S., JR., and R. T. BROWN, U. S. Field Laboratory for Tung Investigations, Bogalusa, La. Effects of Nitrogen, Phosphorus and Potassium on Growth, Yield, and Leaf Composition of Mature Tung Trees on Red Bay Fine Sandy Loam. (Illustrated 3¼ x 4)

11:05 *87.* LAGASSEE, F. S., J. H. LASSITER, and H. L. WEISNER, U. S. Field Laboratory for Tung Investitions, Gainesville, Fla. Effects of Nitrogen, Phosphorus, Potassium and Calcium on Yield and Leaf Composition of Tung Trees on Arredondo Fine Sandy Loam. (Illustrated 3¼ x 4)

11:15 *88.* DROSDOFF, M., H. L. BARROWS, F. S. LAGASSEE, and C. B. SHEAR, U. S. Field Laboratory for Tung Investigations, Gainesville, Fla. Interrelations of Source of Nitrogen with Levels of Nitrogen, Calcium, and Magnesium in Tung Nutrition. (Illustrated 3¼ x 4)

11:30 *89.* SHULTZ, E. F., JR., and G. W. SCHNEIDER, North Carolina State College, Raleigh, N. C. Sample Size Necessary to Estimate Fruit Size and Quality, Tree Growth and Per Cent Fruit Set of Apples and Peaches.

Section II. Vegetable Crops—Vegetable Nutrition. ***Room 209, Anderson Hall.*** J. D. HARTMAN, presiding.

9:00 *90.* LAMBETH, VICTOR NEAL, University of Missouri, Columbia, Mo. Bibb Lettuce Yield and Mineral Composition as Influenced by Soil Exchange Capacity, Potash Saturation and Source of Potash. (Illustrated 2 x 2 and 3¼ x 4)

9:15 *91.* WESTGATE, PHILIP J., and J. D. WRIGHT, University of Florida Central Florida Experiment Station, Sanford, Fla. and Geigy Company, Inc., Orlando, Fla. Chelated Iron as Soil and Foliar Applications for Vegetables and Ornamentals. (Illustrated 2 x 2)

9:30 *92.* OZAKI, CHARLES, University of Florida, Everglades Experiment Station, Belle Glade, Fla. Relative Effectiveness of Foliar Applications of Several Manganese Sources in Correcting Manganese Deficiency. (Illustrated 2 x 2)

9:45 *93.* HARWARD, M. E., W. A. JACKSON, W. L. LOTT, and D. D. MASON, North Carolina State Col-

lege, Raleigh, N. C. Effects of Al, Fe, and Mn Upon the Growth and Composition of Lettuce. (Illustrated 2 x 2)

10:00 *94.* MASSEY, P. H., JR., JAMES F. EHEART, and R. W. YOUNG, Virginia Polytechnic Institute, Blacksburg, Va. Factors Influencing the Nutritive Value of Greens: The Effect of Light, Soil pH, and Trace Elements on the Dry Matter, Ascorbic Acid, Carotene, Thiamine, and Riboflavin Contents and Yield of Turnip Greens. (Illustrated 2 x 2)

10:10 *95.* ACKLEY, WILLIAM B., Washington State College, Pullman, Wash. Blossom-end Rot of Tomatoes as Affected by Calcium-Potassium Nutrition. (Illustrated 3¼ x 4)

10:20 *96.* DOWNES, J. D., and R. L. CAROLUS, Michigan State College, East Lansing, Mich. Some Studies on the Growth and Chemical Composition of the Onion as Influenced by its Nutrition.

10:35 *97.* LINGLE, J. C., and R. L. CAROLUS, Michigan State College, East Lansing, Mich. Differential Varietal Response of Several Vegetable Crops to Sodium and Boron. (Illustrated 2 x 2)

10:50 *98.* REYNOLDS, CHARLES W., and F. C. STARK, University of Maryland, College Park, Md. Mineral Content of Cucumber Plants as Related to Growth and Yield. (Illustrated 3¼ x 4)

11:00 *99.* WARE, L. M., and W. A. JOHNSON, Alabama Polytechnic Institute, Auburn, Ala. Effect of Rate and Time of Application of Nitrogen, Phosphorus, and Potash on early Spring Potatoes. (Illustrated 2 x 2)

11:15 *100.* LAMBETH, VICTOR NEAL, University of Missouri, Columbia, Mo. Yield Response of Vegetables to Variable Ca, Mg and K Saturation Levels on Lintonia Fine Sandy Loam. (Illustrated 3¼ x 4)

Section III. Processing—Maturity and Post Harvest Physiology. ***Room 238, Administration Building.*** W. A. GOULD, presiding.

9:00 *101.* TWIGG, BERNARD, and AMIHUD KRAMER, University of Maryland, College Park, Md. Objective Grading of the Maturity Factor in Processed Sweet Corn.

9:15 *102.* WINTER, J. D., R. E. NYLUND, and A. F. LEGUN, University of Minnesota, St. Paul, Minn. Relation of Sugar Content to Flavor of Sweet Corn After Harvest. (Illustrated 2 x 2)

9:25 *103.* SHOWALTER, R. K., and L. H. HALSEY, University of Florida, Gainesville, Fla. Effects of Maturity at Harvest on Firmness and Transit Injuries of Tomatoes. (Illustrated 2 x 2 and 3¼ x 4)

9:40 *104.* NETTLES, V. F., C. B. HALL, and R. A. DENNISON, University of Florida, Gainesville, Fla. Influence of Light on Coloring of Mature Green Tomato Fruits.

9:55 *105.* DENNISON, R. A., C. B. HALL, and V. F. NETTLES, University of Florida, Gainesville, Fla. The Pectinesterase Activity of Tomato Fruits at Different Stages of Maturity.

10:10 *106.* MORRIS, LEONARD L., University of California, Davis, Calif. Effect of Field and Postharvest Chilling on Ripening of Mature-Green Tomatoes. (Illustrated 2 x 2)

10:25 *107.* MORRIS, LEONARD L., and HARLAN K. PRATT, University of California, Davis, Calif. The Effect of Temperature on Respiration and Storage Behavior of Onions. (Illustrated 2 x 2)

10:40 *108.* DRINKWATER, WILLIAM O., and BYRON E. JAMES, University of Connecticut, Storrs, Conn. Influence of Irrigation on Maturity and Quality of Onion Hybrids. (Illustrated 3¼ x 4)

10:50 *109.* PRATT, HARLAN K., University of California, Davis, Calif. Ripening Studies with Honey Dew Melons. (Illustrated 2 x 2)

11:05 *110.* PRATT, HARLAN K., LEONARD L. MORRIS, and CARL L. TUCKER, University of California, Davis, Calif. The Influence of Temperature on Respiration and Storage Life of Head Lettuce. (Illustrated 2 x 2)

11:20 *111.* GRIERSON-JACKSON, WILLIAM and WILLIAM F. NEWHALL, University of Florida, Citrus Experiment Station, Lake Alfred, Fla. Studies on the Tolerance to Ethylene of Various Types of Citrus Fruits. (Illustrated 2 x 2)

11:35 *112.* TING, S. V., University of Florida, Citrus Experiment Station, Lake Alfred, Fla. Changes in Sugar Composition of Citrus Fruits During Maturation. (Illustrated 3¼ x 4)

Section IV. Floriculture and Ornamental Horticulture—Nutrition. ***Room 208, Administration Building.*** CONRAD LINK, presiding.

9:00 *113.* BREWER, ROBERT F., and O. W. DAVIDSON, Rutgers University, New Brunswick, N. J. The Nutrient Requirements of Some Popular Garden Flowers. (Illustrated 2 x 2 and 3¼ x 4)

9:15 *114.* WOLTZ, SHREVES S., University of Florida Gulf Coast Experiment Station, Bradenton, Fla. Effect of Differential Supplies of Nitrogen, Potassium and Calcium on Quality and Yield of Gladiolus Flowers and Corms. (Illustrated 2 x 2 and 3¼ x 4)

9:30 *115.* SHANKS, JAMES B., and CONRAD B. LINK, University of Maryland, College Park, Md. The Relationship of Potassium, Calcium and Magnesium in the Mineral Nutrition of Poinsettia as Indicated by Growth and by Leaf Analysis. (Illustrated 2 x 2)

9:40 *116.* LINK, CONRAD B., and JAMES B. SHANKS, University of Maryland, College Park, Md. Effects of Phosphorus and Potassium and Rate of Fertilizer Application on the Flowering of Azaleas.

9:50 *117.* BELL, CHARLES W., and HENRY P. ORR, Alabama Polytechnic Institute, Auburn, Ala. Nutrient Deficiency Symptoms of *Camellia japonica.* (Illustrated 2 x 2)

10:05 *118.* FURUTA, TOKUJI, Alabama Polytechnic Institute, Auburn, Ala. Response of Camellia to Boron. (Illustrated 2 x 2)

10:15 *119.* KIMBROUGH, W. D., and R. H. HANCHEY, Louisiana State University, Baton Rouge, La. The Effect of Several Materials on Soil pH and the Growth of Small Camellia Plants. (Illustrated 2 x 2)

10:25 *120.* FURUTA, TOKUJI, CHARLES W. BELL, and HENRY P. ORR, Alabama Polytechnic Institute, Auburn, Ala. Influence of the Rate and Analysis of

Fertilizer on the Growth and Survival of Three Camellia Varieties. (Illustrated 2 x 2)

10:40 *121.* DUNHAM, C. W., SAM ASEN, and C. L. HAMNER, Michigan State College, East Lansing, Mich. Plant Roots and Cation Absorption. (Illustrated 3¼ x 4)

10:50 *122.* LANGSTON, RUBLE, Purdue University, Lafayette, Ind. Absorption and Accumulation of Radioisotopes by the Orchid Plant. (Illustrated 2 x 2)

11:00 *123.* BELL, CHARLES and TOK FURUTA, Alabama Polytechnic Institute, Auburn, Ala. Nutrient Deficiency Symptoms of Azaleas. (Illustrated 2 x 2)

11:10 *24.* ASEN, SAM and SYLVAN WITTWER, Michigan State College, East Lansing, Mich. Factors Affecting the Foliar Absorption and Translocation of Radio Phosphorus by *Chrysanthemum morifolium.* (Illustrated 2 x 2)

11:20 *125.* BREWER, R. F., J. T. MIDDLETON, and J. C. KAUDY, Citrus Experiment Station, Riverside, Calif. The Effect of NPK Fertilization on Subsequent Damage by Smog. (Illustrated 2 x 2 and 3¼ x 4)

TUESDAY AFTERNOON, SEPTEMBER 7

Concurrent Sections I, II, III, IV, V

1:30 **Section I. Joint Meeting with the Biometrics Society (ENAR).** ***Room 207, Leigh Hall.***

Symposium: The Use of Variance Components in Horticultural Research. GEORGE F. POTTER, presiding.

a. W. D. HANSON, USDA Plant Industry Station, Beltsville, Md. General Concepts and Considerations for the Use of Variance Components.

b. E. F. SCHULTZ, Alabama Polytechnic Institute, Auburn, Ala. Optimum Allocation of Experimental Material—With an Illustrative Problem in Estimating Fruit Quality.

c. R. H. SHARPE, and C. H. VAN MIDDELEM, University of Florida, Gainesville, Fla. Applications of Variance Components to Horticultural Problems With Special Reference to a Parathion Residue Study.

d. R. J. MONROE, and D. D. MASON, North Carolina State College, Raleigh, N. C. Problems of Experimental Inference With Special Reference to Multiple Location Experiments, and Experiments With Perennial Crops.

Section II. Pomology—Culture and Nutrition. ***Room 203, Anderson Hall.*** LEON HAVIS, presiding.

1:30 *126.* BOYNTON, DAMON and L. C. ANDERSON, Cornell University, Ithaca, N. Y. and New York Agricultural Experiment Station, Geneva, N. Y. Some Effects of Non-Leguminous Hay Mulching, Inorganic Nitrogen Fertilization and Liming on the Behavior of McIntosh Apple Trees; and the Chemical Composition of Their Leaves and the Soil Under Them. (Illustrated 2 x 2 and 3¼ x 4)

1:45 *127.* EMMERT, FRED, University of Connecticut, Storrs, Conn. The Effect of Tree Age, Variety, and Soil Management System on the Nutrient Content of Apple Leaves. (Illustrated 2 x 2)

1:55 *128.* NELSON, STUART H. and H. B. TUKEY, Central Experimental Farms, Ottawa, Canada and Michigan State College, East Lansing, Mich. Effect of Controlled Root Temperature on Malling Apple Rootstock in Water Culture. (Illustrated 2 x 2)

2:05 *129.* LONGLEY, ROBERT PRESCOTT, Canada Experimental Station, Kentville, N. S., Canada. The Heat Required to Develop Apple Bloom at Kentville, Nova Scotia. (Illustrated 3¼ x 4)

2:20 *130.* BENSON, NELS R. and RICHARD M. BULLOCK, Washington State College, Tree Fruit Experiment Station, Wenatchee, Wash. Effect of Levels of Nitrogen and Pruning on Starking and Golden Delicious Apples. (Illustrated 2 x 2)

2:35 *131.* CURTIS, O. F., JR., E. H. GLASS, J. M. HAMILTON, and M. SZKOLNIK, New York Agricultural Experiment Station, Geneva, N. Y. Effects of Some Newer Pesticide Sprays on the Performance of Apple Trees. (Illustrated 2 x 2)

2:50 *132.* SIMONS, ROY K., University of Illinois, Urbana, Ill. Effects of Different Orchard Cultural Management Practices Upon Availability of Soil Moisture. (Illustrated 2 x 2)

3:05 *133.* KENWORTHY, A. L. and JANE HINSVARK, Michigan State College, East Lansing, Mich. Influence of Orchard Covers Upon Soil Analysis. (Illustrated 2 x 2)

3:15 *134.* KWONG, SHUE SHAN and A. L. KENWORTHY, Michigan State College, East Lansing, Mich. Mulching in Relation to Soil Analysis. (Illustrated 2 x 2)

3:25 *135.* SCHNEIDER, G. W., North Carolina State College, Raleigh, N. C. Peach Pruning Studies. (Illustrated 2 x 2)

3:40 *136.* SAVAGE, E. F. and F. F. COWART, Georgia Experiment Station, Experiment, Ga. The Effect of Size of Peach Trees at Planting Time Upon their Subsequent Growth and Production. (Illustrated 2 x 2)

Section III. Vegetable Crops—General Culture. ***Room 209, Anderson Hall.*** J. D. HARTMAN, presiding.

1:30 *137.* GUZMAN, V. L. and E. A. WOLF, University of Florida, Everglades Experiment Station, Belle Glade, Fla. Impregnated Chloro IPC for Post-emergence Weed Control in Onions. (Illustrated 2 x 2 and 3¼ x 4)

1:45 *138.* WOLF, E. A. and V. L. GUZMAN, University of Florida, Everglades Experiment Station, Belle Glade, Fla. Combination of Chemical and Mechanical Weed Control in Onions Growing in Peat Soil. (Illustrated 2 x 2)

2:00 *139.* EL-KATTAN, A. A., K. R. STINO, and A. ATTWA, University of Maryland, College Park, Md. Yield and Grade of Tomatoes as Affected by Frequency of Irrigation and Size of Seedling. (Illustrated 3¼ x 4)

2:15 *140.* JOHNSTONE, F. E., JR., H. D. MORRIS and K. W. HANSON, University of Georgia, Athens, Ga.

The Effects of Soil Conditioners on the Growth of Horticultural Crops and the Physical Properties of Georgia Soils. (Illustrated 2 x 2)

2:30 *141.* WESTER, ROBERT E., Plant Industry Station, USDA, Beltsville, Md. Effect of Synthetic Soil Conditioners on Growth and Yield of Tomato Plants. (Illustrated 2 x 2)

2:40 *142.* MATTHEWS, WILLIAM A. and FRANCIS C. STARK, University of Maryland, College Park, Md. Rate of Planting Sweet Potatoes with Reference to Number of Plants per Hill.

2:50 *143.* WOLF, EMIL A., University of Florida, Everglades Experiment Station, Belle Glade, Fla. Average Head Size, Yield, and Maturity of Three Varieties of Cabbage as Affected by Spacing. (Illustrated 3¼ x 4)

3:00 *144.* PATTERSON, D. R., A. H. KREZDORN and A. M. LASHEEN, Texas A and M College, College Station, Texas. Some Effects of Preharvest Foliage Sprays of Maleic Hydrazide on Sprout Inhibition, Proximal Dominance and Composition of Sweet Potato Roots. (Illustrated 2 x 2 and 3¼ x 4)

3:10 *145.* RAPPAPORT, LAWRENCE and SYLVAN H. WITTWER, Michigan State College, East Lansing, Mich. Response of Great Lakes Head Lettuce to Night Temperature Following Seed Vernalization. (Illustrated 2 x 2)

3:25 *146.* KATTAN, AHMED and L. E. SCOTT, University of Maryland, College Park, Md. Varietal Differences in the Oxidase System of the Sweet Potato. (Illustrated 2 x 2 and 3¼ x 4)

3:40 *147.* SCOTT, L. E. and AHMED KATTAN, University of Maryland, College Park, Md. Carbohydrate Transformations in Sweet Potatoes. (Illustrated 3¼ x 4)

3:55 *148.* WARE, LAMAR M. and W. AUBRA JOHNSON, Alabama Polytechnic Institute, Auburn, Ala. Use of Field Bins for Experimental Studies with Vegetable Crops. (Illustrated 2 x 2)

Section IV. Processing—Vegetable Processing. ***Room 208, Administration Building.*** W. A. GOULD, presiding.

1:30 *149.* STARK, FRANCIS C., WAYNE L. OGLE and AMIHUD KRAMER, University of Maryland, College Park, Md. Suitability of the Chesapeake Tomato Variety for Processing. (Illustrated 3¼ x 4)

1:40 *150.* EL-KATTAN, A. A., W. L. OGLE, E. SOKOLOV and A. KRAMER, University of Maryland, College Park, Md. Effect of Various In-Plant Treatments on Quality of Processed Tomato Juice. (Illustrated 3¼ x 4)

1:50 *151.* KORNETSKY, AARON, and AMIHUD KRAMER, University of Maryland, College Park, Md. The Utilization of Quality Control Charts for Production of Cream Style Corn.

2:00 *152.* HOOVER, MAURICE W., and R. A. DENNISON, University of Florida, Gainesville, Fla. Some Treatments Influencing the Quality of Florida Frozen Strawberries. (Illustrated 3¼ x 4)

2:10 *153.* HOOVER, MAURICE W., and R. A. DENNISON, University of Florida, Gainesville, Fla. A Rapid Objective Method for the Evaluation of Color in Strawberries. (Illustrated 3¼ x 4)

2:20 *154.* MAVIS, JAMES O., and W. A. GOULD, Ohio State University, Columbus, Ohio. Evaluation of Varieties of Tomatoes for the Manufacture of Canned Tomato Juice. (Illustrated 2 x 2 and 3¼ x 4)

2:35 *155.* DAVIS, REES B., and W. A. GOULD, Ohio State University, Columbus, Ohio. The Relationship of the Color of the Raw Product to the Color of Canned Tomato Juice (Rutgers variety). (Illustrated 2 x 2 and 3¼ x 4)

2:50 *156.* MacGILLIVRAY, JOHN H., W. B. NEUBURG, MAS YAMAGUCHI, and L. K. MANN, University of California, Davis, Calif. Wrinkled Seed Coat Defect in Green Lima Beans for Freezing. (Illustrated 2 x 2)

3:05 *157.* VAN MIDDELEM, C. H., and R. E. WAITES, University of Florida, Gainesville, Fla. Insecticide Residues on Vegetable Crops. (Illustrated 3¼ x 4)

3:20 *158.* THOMPSON, BUFORD D., and C. H. VAN MIDDELEM, University of Florida, Gainesville, Fla. Detergent Washings for the Removal of Insecticide Residues from Fresh Vegetables. (Illustrated 2 x 2)

3:35 *159.* DEWEY, D. H., and S. H. WITTWER, Michigan State College, East Lansing, Mich. Control of Top Growth of Pre-packaged Radishes. (Illustrated 2 x 2)

3:45 *160.* KROCHMAL, ARNOLD, Agricultural and Technical Institute, State University of New York, Delhi, N. Y. Horticulture in Greece: Fruit and Vegetable Production. (Illustrated 2 x 2)

4:00 *161.* WENZEL, F. W., E. L. MOORE, and A. F. CAMP, University of Florida Citrus Experiment Station, Lake Alfred, Fla. Research in Citrus Processing and By-Products at the University of Florida Citrus Experiment Station.

Section V. Floriculture and Ornamental Horticulture—Effects of Light, Temperature, and Growth Regulators. ***Room 331, Administration Building.*** CONRAD LINK, presiding.

1:30 *162.* SNYDER, WILLIAM E., Cornell University, Ithaca, N. Y. The Onset and Loss of Temperature Hardiness of California Privet, *Ligustrum ovalifolium.* (Illustrated 2 x 2)

1:45 *163.* SNYDER, WILLIAM E., and CHARLES E. HESS, Cornell University, Ithaca, N. Y. A Preliminary Report of the Effect of Air Temperature and of Mulches on the Temperature of Soil in Nursery Cans. (Illustrated 2 x 2)

2:00 *164.* PIRINGER, ALBERT A., and NEIL W. STUART, Plant Industry Station, USDA, Beltsville, Md. Photoperiodic Responses in Hydrangeas. (Illustrated 2 x 2 and 3¼ x 4)

2:15 *165.* STUART, NEIL W., Plant Industry Station, USDA, Beltsville, Md. Some Effects of Artificial Light, Cold Storage, and Disbudding on Flowering of Greenhouse Hydrangeas. (Illustrated 2 x 2)

2:30 *166.* FURUTA, TOKUJI, Alabama Polytechnic Institute, Auburn, Ala. Photoperiod and Flowering of *Chrysanthemum morifolium.*

2:40 *167.* CATHEY, HENRY M., Cornell University, Ithaca, N. Y. Chrysanthemum Temperature Study. IV. Effect of Temperature Shifts Upon the Flowering of *Chrysanthemum morifolium.* (Illustrated 2 x 2)

2:55 *168.* CATHEY, HENRY M., Cornell University, Ithaca, N. Y. Effects of Various Light Intensities on the Photosynthetic Ability of *Chrysanthemum morifolium.* (Illustrated 2 x 2)

3:10 *169.* McELWEE, EDGAR W., University of Florida, Agricultural Extension Service, Gainesville, Fla. The Influence of Light Intensity on the Vegetative and Reproductive Growth of Common Camellia.

3:20 *170.* HANCHEY, R. HOWARD, Louisiana State University, Baton Rouge, La. Effects of Fluorescent and Natural Light on Reproductive and Vegetative Growth in *Saintpaulia.* (Illustrated 2 x 2 and 3¼ x 4)

3:30 *171.* ASEM, SAM, Michigan State College, East Lansing, Mich. Chemical Control of the Flowering of *Chrysanthemum morifolium.* I. Auxin and Flowering. (Illustrated 2 x 2)

3:40 *172.* BING, ARTHUR, Cornell-USDA Ornamentals Research Laboratory, Farmingdale, N. Y. Effects of Sodium 2, 4-dichlorphenoxyethyl sulfate (Crag Herbicide #1) on Annuals and Perennials. (Illustrated 2 x 2)

TUESDAY EVENING, SEPTEMBER 7

6:30 **Annual Banquet,** The American Society for Horticultural Science. ***Banquet Room, Student Service Center.***

Address by Retiring President, F. P. CULLINAN, USDA Agricultural Research Service, Beltsville, Md. "A Look Ahead in Horticultural Research."

WEDNESDAY MORNING, SEPTEMBER 8

Concurrent Sections I, II, III, IV

Section I. Pomology—Culture and Nutrition of Small Fruits. *Room 203, Anderson Hall.* LEON HAVIS, presiding.

9:00 *173.* SHAULIS, NELSON, and KEITH KIMBALL, New York Agricultural Experiment Station, Geneva, N. Y. Vineyard Spacing Effects on Concord Growth and Fruitfulness. (Illustrated 2 x 2)

9:10 *174.* SHAULIS, NELSON, New York Agricultural Experiment Station, Geneva, N. Y. The Association of Concord Petiole Composition with Deficiency Symptoms, Growth, and Yield of Concord Grapes. (Illustrated 2 x 2)

9:25 *175.* BEATTIE, JAMES M., Ohio Agricultural Experiment Station, Wooster, Ohio. Mulch as a Soil Management System for Grapes. (Illustrated 2 x 2)

9:40 *176.* DOLL, CARROLL C., Iowa State College, Ames, Iowa. Studies of Concord Grape Roots in Loess Soils. (Illustrated 2 x 2)

9:50 *177.* LARSEN, R. P., and A. L. KENWORTHY, Michigan State College, East Lansing, Mich. Nutritional Conditions in Concord Vineyards of Michigan. (Illustrated 2 x 2)

10:00 *178.* ARCHIBALD, J. A., and A. E. ERICKSON, Michigan State College, East Lansing, Mich. The Effect of a Number of Organic Amendments on the Physical and Chemical Properties of a Typical Niagara Peninsula Grape Soil.

10:15 *179.* COOK, JAMES A., and THOMAS KISHABA, University of California, Davis, Calif. Petiole Nitrate Analysis as a Criterion for Determining Nitrogen Needs of California Vineyards. (Illustrated 2 x 2)

10:30 *180.* SMITH, CARTER, and L. R. BRYANT, Rutgers University, New Brunswick, N. J. Nitrogen and Phosphorus Relationships in Inorganic Nutrition of Strawberries. (Illustrated 2 x 2 and 3¼ x 4)

10:40 *181.* BROWN, JOHN F., Cornell University, Ithaca, N. Y. Responses of Strawberry Plants to Freezing Temperatures. (Illustrated 2 x 2)

10:55 *182.* GORFEIN, H., F. B. CHANDLER, and W. B. ESSELEN, Massachusetts Agricultural Experiment Station, University of Massachusetts, Amherst, Mass. Biochemical Changes in Cranberries During Development. (Illustrated 3¼ x 4)

11:05 *183.* GORFEIN, H., F. B. CHANDLER, and W. B. ESSELEN, Massachusetts Agricultural Experiment Station, University of Massachusetts, Amherst, Mass. Effect of Quality and Quantity of Light on Composition of Cranberries. (Illustrated 3¼ x 4)

11:15 *184.* CAIN, JOHN C., and R. W. HOLLEY, New York Agricultural Experiment Station, Geneva, N. Y. Nitrogen Metabolism in Relation to Chlorosis of Blueberries. A Preliminary Report. (Illustrated 2 x 2)

Section II. Pomology—Nutrition and Culture of Subtropical and Tropical Fruits. *Room 209, Anderson Hall.* E. S. HABER, presiding.

9:00 *185.* EMBLETON, T. W., J. D. KIRKPATRICK, and W. W. JONES, University of California, Citrus Agricultural Experiment Station, Riverside, Calif. Four Years' Results with Phosphate Responses by Valencia Orange Trees. (Illustrated 3¼ x 4)

9:15 *186.* EMBLETON, T. W., J. D. KIRKPATRICK, and W. W. JONES, University of California, Citrus Agricultural Experiment Station, Riverside, Calif. Influence of Several Phosphate Sprays on Phosphorus Deficiency of Valencia Orange Trees. (Illustrated 3¼ x 4)

9:30 *187.* KIRKPATRICK, J. D., T. W. EMBLETON, and W. W. JONES, University of California, Citrus Agricultural Experiment Station, Riverside, Calif. "Creasing" of Valencia Orange Fruits as Related to NPK Fertilization, Yield, Fruit Quality, and Ash Analysis of the Leaves and Fruits. (Illustrated 3¼ x 4)

9:45 *188.* WALLACE, A., and Z. E. ZIDAN, University of California, Los Angeles, Calif. Nitrogen Translocation in Citrus. (Illustrated 3¼ x 4)

9:55 *189.* KUYKENDALL, J. RICHARD, University of Florida Citrus Experiment Station, Lake Alfred, Fla. Iron Analysis of Citrus Leaves as a Means of Predicting the Occurrence of Iron Chlorosis. (Illustrated 3¼ x 4)

10:05 *190.* WANDER, IRVIN W., University of Florida Citrus Experiment Station, Lake Alfred, Fla. Sources Contributing to Subsoil Acidity in Florida Citrus Groves. (Illustrated 3¼ x 4)

10:15 *191.* REITZ, HERMAN J., JOHN W. SITES, and WALLACE T. LONG, University of Florida Citrus Experiment Station, Lake Alfred, Fla. The Reduction of Fruit Size of Hamlin and Temple Oranges as Affected by Aphid Damage. (Illustrated 3¼ x 4)

10:25 *192.* JONES, W. W., C. B. CREE, and T. W. EMBLETON, University of California, Citrus Experiment Station, Riverside, Calif. Effect of Time of Harvest on Yield, Size, and Grade of Valencia Oranges. (Illustrated 3¼ x 4)

10:40 *193.* DESZYCK, EDWARD, University of Florida Citrus Experiment Station, Lake Alfred, Fla. The Effect of Variable Rates of Lead Arsenate Sprays on the Acid Content of Ruby Red Grapefruit Juice. (Illustrated 3¼ x 4)

10:55 *194.* KUYKENDALL, J. RICHARD, University of Florida Citrus Experiment Station, Lake Alfred, Fla. Absorption and Hydrolysis of Urea by Detached Citrus Leaves Immersed in Urea Solutions. (Illustrated 3¼ x 4)

11:05 *195.* EMBLETON, T. W., W. W. JONES, and J. D. KIRKPATRICK, University of California, Citrus Experiment Station, Riverside, Calif. Effects of NPK Fertilization of Avocados in California. (Illustrated 3¼ x 4)

11:20 *196.* Withdrawn.

11:35 *197.* PIRINGER, ALBERT A., and HARRY A. BORTHWICK, Plant Industry Station, Beltsville, Md. Photoperiodic Responses in Coffee. (Illustrated 2 x 2 and 3¼ x 4)

Section III. Vegetable Crops—Culture and Nutrition. ***Room 207, Leigh Hall.*** J. D. HARTMAN, presiding.

9:00 *198.* JANES, BYRON, University of Connecticut, Storrs, Conn. Vegetable Rotation Studies in Connecticut. III. Effect of Sweet Corn and Vetch on the Growth of Several Crops Which Follow. (Illustrated 3¼ x 4)

9:10 *199.* CAMPBELL, JOSEPH D., Technical Service Department, Mathieson Agricultural Chemicals Division, Mathieson Chemical Corporation, Baltimore, Md. The Mechanics of Applying Anhydrous Ammonia on Vegetable Crops. (Illustrated 2 x 2)

9:25 *200.* JONES, MARRION B., and JOHN L. BOWERS, University of Arkansas, Fayetteville, Ark. Factors Affecting Germination of Okra Seed. (Illustrated 2 x 2)

9:40 *201.* HOFFMAN, I. C., F. S. HOWLETT, E. K. ALBAN, and W. P. MARTIN, Ohio Agricultural Experiment Station, Wooster, Ohio. The Yields of Greenhouse Tomatoes as Affected by Various Mulching Materials and by Soil Steaming and Leaching Practices. I. Plant Growth and Yield. (Illustrated 3¼ x 4)

9:55 *202.* HOWLETT, F. S., I. C. HOFFMAN, E. K. ALBAN, and W. P. MARTIN, Ohio Agricultural Experiment Station, Wooster, Ohio. Greenhouse Tomatoes as Affected by Various Mulching Materials and by Soil Steaming and Leaching Practices. II. Chemical Analysis of Foliage. (Illustrated 2 x 2 and 3¼ x 4)

10:10 *203.* HALL, C. B., and R. A. DENNISON, University of Florida, Gainesville, Fla. Environmental Factors Influencing Vascular Browning of Tomato Fruits.

10:25 *204.* REYNOLDS, CHARLES W., F. C. STARK, and W. L. OGLE, University of Maryland, College Park, Md. Interrelationships of Variety, Spacing, Fertilizers and Irrigation on the Yield of Snap Beans. (Illustrated 3¼ x 4)

10:35 *205.* LANGSTON, RUBLE, Purdue University, Lafayette, Ind. Anatomical Structure and Its Effect on the Accumulation of Radioisotopes with Respect to Fertilizer Placement. (Illustrated 2 x 2)

10:45 *206.* LANGSTON, RUBLE, Purdue University, Lafayette, Ind. Studies on the Accumulation of Radioisotopes in the Peppermint Plant. (Illustrated 2 x 2)

10:55 *207.* LANGSTON, RUBLE, Purdue University, Lafayette, Ind. Studies on the Accumulation of Radioisotopes in Tomato. (Illustrated 2 x 2)

Section IV. Floriculture and Ornamental Horticulture—Storage, Morphology and Propagation. ***Room 208, Administration Building.*** CONRAD LINK, presiding.

9:00 *208.* DICKEY, RALPH D., University of Florida, Gainesville, Fla. Effect of Time of Storage at 0° F. on Freezing Injury to Four Species of Foliage Plants as Affected by Location and Insulation of the Container. (Illustrated 2 x 2 and 3¼ x 4)

9:15 *209.* KOFRANEK, ANTON M., University of California, Los Angeles, Calif. The Flower Initiation and Development of Two Poinsettia Varieties. (Illustrated 2 x 2)

9:30 *210.* WIDMOYER, FRED B., and DONALD P. WATSON, Michigan State College, East Lansing, Mich. Anatomical Aspects of Temperature Injury to *Thuja occidentalis* cv. *nigra.* (Illustrated 2 x 2)

9:40 *211.* HANZEL, ROBERT, and KENNARD G. NELSON, Ohio State University, Columbus, Ohio. Floral Initiation in Carnation Variety Northland. (Illustrated 2 x 2)

9:50 *212.* LANGHANS, ROBERT W., and RICHARD C. ANDREASEN, Cornell University, Ithaca, N. Y. Starting Dormant Better Times Rose Plants Using Mist. (Illustrated 2 x 2)

10:05 *213.* SWEET, DALE V., and R. F. CARLSON, Michigan State College, East Lansing, Mich. A New Apparatus for Plant Propagation Studies. (Illustrated 2 x 2)

10:20 *214.* HESS, CHARLES E., Cornell University, Ithaca, N. Y. A Physiological Comparison Between the Use of Mist and High Humidity in Plant Propagation. (Illustrated 2 x 2)

10:35 *215.* HESS, CHARLES E., and WILLIAM E. SNYDER, Cornell University, Ithaca, N. Y. Propagation of Softwood Cuttings Using Constant Humidity, Interrupted Mist, Electronically Controlled Mist and Controlled Humidity. (Illustrated 2 x 2)

10:50 *216.* HESS, CHARLES E., and WILLIAM E. SNYDER, Cornell University, Ithaca, N. Y. A Comparison of Mist and Open Bench Propagation of Narrow-Leaved Evergreen Cuttings. (Illustrated 2 x 2)

11:00 *217.* SNYDER, WILLIAM E., and CHARLES E. HESS, Cornell University, Ithaca, N. Y. The Long Term Storage of Rooted Cuttings of Some Ornamental Plants. (Illustrated 2 x 2)

WEDNESDAY AFTERNOON, SEPTEMBER 8

Concurrent Sections I, II, III, IV

Section I. Pomology—Growth Regulators. ***Room 209, Anderson Hall.*** LEON HAVIS, presiding.

1:30 *218.* HAVIS, A. LEON, P. C. MARTH, and V. E. PRINCE, U. S. Plant Industry Station, Horticultural Crops Research Branch, Beltsville, Md. Thinning Peaches with Chemical Sprays After Bloom. (Illustrated 2 x 2)

1:40 *219.* LANGER, CLARENCE A., Michigan State College, East Lansing, Mich. Effect of Growth Regulators on Thinning of Peaches. (Illustrated 2 x 2 and 3¼ x 4)

1:55 *220.* HILL, ROBERT G., JR., Ohio Agricultural Experiment Station, Wooster, Ohio. A Comparison of Napthaleneacetate and Napthaleneacetamide for Thinning Halehaven Peaches. (Illustrated 2 x 2 and 3¼ x 4)

2:05 *221.* HAWTHORNE, P. L., LLOYD G. JONES, J. C. TAYLOR, and WILLIAM A. SISTRUNK, Louisiana State University, Baton Rouge, La. The Effect of Preharvest Sprays of 2, 4, 5-trichlorophenoxyacetic Acid and Maleic Hydrazide Upon Certain Peach Varieties. (Illustrated 2 x 2)

2:20 *222.* CRANE, JULIAN C., University of California, Davis, Calif. Preharvest Drop, Size and Maturity of Apricots as Affected by 2, 4, 5-trichlorophenoxyacetic Acid. (Illustrated 2 x 2)

2:35 *223.* ALDERMAN, DEFOREST, West Virginia University, Morgantown, W. Va. Alpha-naphthylacetamide: A Chemical Fruit Thinner.

2:45 *224.* HORSFALL, FRANK, JR., and R. C. MOORE, Virginia Polytechnic Institute, Blacksburg, Va. Carbamate Herbicides as Fruit Thinners. (Illustrated 2 x 2)

2:55 *225.* HOFFMAN, M. B., L. J. EDGERTON, and E. G. FISHER, Cornell University, Ithaca, N. Y. Comparisons of Naphthaleneacetic Acid and Naphthaleneacetamide for Thinning Apples. (Illustrated 2 x 2)

3:10 *226.* POAPST, P. A., W. R. PHILLIPS, and S. H. NELSON, Central Experimental Farms, Ottawa, Ont. Storage Notes on the Behavior of McIntosh Apples Treated with Various Pre-Harvest Sprays. (Illustrated 2 x 2)

3:25 *227.* WEAVER, ROBERT J., University of California, Davis, Calif. Response of *Vitis vinifera* Grapes to Applications of Benzothiazol-2-oxyacetic Acid. (Illustrated 2 x 2)

3:40 *228.* MERCER, G. R., and JOHN F. BROWN, Horticultural Experiment Station, Vineland, Ontario, Canada. Effects of B-napthoxy Acetic Acid on the Strawberry Fruit. (Illustrated 2 x 2)

1:30 **Section II. Symposium. Heavy Metals in Plant Nutrition.** ***Room 207, Leigh Hall.*** JOHN C. CAIN, presiding.

a. DANIEL I. ARNON, University of California, Berkeley, Calif. Some Recent Advances in the Study of Micronutrient Metals in Plant Nutrition.

b. PAUL SMITH, U. S. Field Station, Orlando, Fla. Accumulation, Distribution, Toxicity and Interrelationships of Heavy Metals in Plant Nutrition.

c. IVAN STEWART and C. D. LEONARD, University of Florida Citrus Experiment Station, Lake Alfred, Fla. Heavy Metal Complexes as Related to Absorption and Utilization by Plants.

d. E. R. PURVIS, Rutgers University, New Brunswick, N. J. Commercial Use and Importance of Heavy Metals as Plant Nutrient in U. S. Agriculture.

1:30 **Section III. Panel Discussion: Plant Introductions in the Vegetable Crops Programs.** ***Room 357, Administration Building.*** W. E. WHITEHOUSE, presiding.

a. W. H. HODGE, USDA Section of Plant Introduction, Agricultural Research Service, Beltsville, Md. Organization and Procedures of the Section of Plant Introduction.

b. W. E. WHITEHOUSE, USDA Section of Plant Introduction, Beltsville, Md. Quarantine Problems in the Introductions of Plants.

c. EDWIN JAMES, USDA Regional Coordinator, Project S-9, Experiment, Ga. Evaluation and Maintenance on a Regional Basis.

d. A. E. KEHR, Louisiana State University, Baton Rouge, La. Summarization of Use Being Made of Introduced Vegetable Crop Plants.

2:45 **Section IV. Panel Discussion: Our Most Valuable and Least Valuable Course and Training Toward a Doctorate in Horticulture.** NORMAN F. CHILDERS, presiding. ***Room 357, Administration Building.***
E. W. McELWEE, WALTER REUTHER, F. S. JAMISON, S. H. YARNELL, W. S. HOUGH, L. L. CLAYPOOL, A. L. STAHL, V. R. GARDNER.

1:30 **Section V. Floriculture and Ornamental Horticulture.** ***Room 208, Administration Building.*** CONRAD LINK, presiding.

Symposium. Research Problems in Floriculture.

3:00 **Meeting of Special Committee on Grades and Standards of Horticultural Speciality Crops.** ***Room 208, Administration Building.*** M. TRUMAN FOSSUM, presiding.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

The Biologists' Smoker will be an event of Wednesday evening, September 8th. Arrange to meet your friends there. Place: Broward Hall.

3. AMERICAN SOCIETY OF HUMAN GENETICS

The American Society of Human Genetics was organized in Washington, D.C. in September 1948. Its objectives are to provide opportunities for closer association among persons interested in problems relating to human inheritance and especially to encourage research in human heredity. Total membership, 468.

President: JAMES V. NEEL, Heredity Clinic, University of Michigan, Ann Arbor, Mich.
Vice-President: A. F. BLAKESLEE, Smith College Genetics Exp. Station, Northampton, Mass.
Treasurer: C. N. HERNDON, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.
Secretary: SHELDON C. REED, University of Minnesota, Minneapolis, Minn.
Local Committee Representative: A. M. WINCHESTER (Stetson).

Room 200, Florida Union has been reserved for the convention period for the use of the American Society of Human Genetics for council and committee meetings.

Program of the Seventh Annual Meeting

SUNDAY EVENING, SEPTEMBER 5

8:00 **Board of Directors Meeting. *Room 200, Florida Union.***

MONDAY MORNING, SEPTEMBER 6

Contributed papers. *Room 403, Library.* PAUL R. DAVID, presiding.

9:00 *229.* METRAKOS, KATHERINE, J. D. METRAKOS, and F. C. FRASER, McGill University. Genetics of Centrencephalic Epilepsy. (Illustrated)

9:20 *230.* MACKLIN, MADGE T., Ohio State University. Inheritance of Gastric Cancer in Man.

9:40 *231.* WOOLF, C. M., and R. C. RICHARDS, Laboratory of Human Genetics, University of Utah. Polyps of the Colon and Rectum. (Illustrated)

10:00 *232.* REED, T. E., and J. V. NEEL, Heredity Clinic, University of Michigan. Multiple Polyposis of the Colon: A Genetic and Population Study. (Illustrated)

10:20 *233.* SUTTON, H. ELDON, (Introduced by William J. Schull), Institute of Human Biology, University of Michigan. Some Effects of Diet on Human Biochemical Individuality. (Illustrated)

10:40 *234.* GARTLER, STANLEY, Institute for the Study of Human Variation, Columbia University. Some Observations of Biochemical Studies in Twins.

11:00 *235.* JUNGEBLUT, CLAUS W., FRANZ J. KALLMANN, and C. NASH HERNDON, The College of Physicians and Surgeons, Columbia University; New York State Psychiatric Institute, Columbia University; and Bowman Gray School of Medicine of Wake Forest College. Family Data on a Receptor-Destroying Enzyme in Human Saliva.

MONDAY AFTERNOON, SEPTEMBER 6

4:00 **Annual Business Meeting. *Room 403, Library.***

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Contributed papers. *Room 403, Library.* H. BENTLEY GLASS, presiding.

9:00 *236.* HAGY, GEORGE W., Southwestern Medical School of the University of Texas. Concentration of Gastric Carcinoma, Peptic Ulcer, Duodenal Ulcer and Cholecystitis in a Family. (Illustrated)

9:20 *237.* KALLMANN, FRANZ J., BERTHA M. ASCHNER, and ARTHUR FALEK, New York State Psychiatric Institute, Columbia University. Comparative Data on Longevity and Causes of Death in a Senescent Twin Population. (Illustrated)

9:40 *238.* BROWN, K. S., and B. L. HANNA, University of Chicago. Differences in Blood Group Frequencies Among Four Semi-isolated Pima Indian Populations. (Illustrated)

10:00 *239.* HANNA, B. L., and K. S. BROWN, University of Chicago. The Degrees of Genetic Relationship Among and Within Semi-isolates of the Pima Indian Population. (Illustrated)

10:20 *240.* WALKER, NORMA FORD, University of Toronto and The Hospital for Sick Children. A Genetical Analysis of Three Cases of Myositis Ossificans Progressiva. (Illustrated)

10:40 *241.* STEPHENS, F. E., FRANK H. TYLER, and AVERY A. SANDBERG, Laboratory of Human Genetics, University of Utah. The Inheritance of Myotonia Dystrophica in Twelve Unrelated Kindreds.

TUESDAY AFTERNOON, SEPTEMBER 7

2:00 **Joint Session with the Alachua County Medical Society. *Room 403, Library.***
Symposium. The Role of Genetics in Medical Practice.

TUESDAY EVENING, SEPTEMBER 7

6:30 **Annual Dinner. Primrose Grill.** Presidential Address: JAMES V. NEEL, Heredity Clinic, University of Michigan. "On Some Pitfalls in Developing an Adequate Genetic Hypothesis."

WEDNESDAY MORNING, SEPTEMBER 8

Contributed papers. *Room 403, Library.* SHELDON C. REED, presiding.

9:00 *242.* STILES, KARL A., and E. JAMES POTCHEN, Michigan State College. The Inheritance of Polydactylism. (Illustrated)

9:20 *243.* UCHIDA, I. A., R. D. ROWE, J. H. O'HANLEY, and P. VLAD, The Hospital for Sick Children, Toronto. Congenital Heart Disease in Twins. (Illustrated)

9:30 *244.* FRASER, F. C., and J. D. METRAKOS, McGill University, Etiological Factors in Congenital Heart Disease. (Illustrated)

10:00 *245.* HERNDON, C. N., and H. O. GOODMAN, Bowman Gray School of Medicine of Wake Forest College and P. R. DAVID, University of Oklahoma. Differentiation of the Autosomal Recessive and Sex-linked Forms of Gargoylism. (Illustrated)

10:20 *246.* YERGANIAN, GEORGE, Children's Cancer Research Foundation, Children's Medical Center, Boston. (Introduced by F. H. Allen) Cytological Maps of Some Human Pachytene Chromosomes. (Illustrated)

10:40 *247.* STEINBERG, ARTHUR G., and SIDNEY FARBER, Children's Cancer Research Foundation, Children's Medical Center, Boston. Genetics of Acute Leukemia, Preliminary Report. (Illustrated)

11:00 *248.* POST, RICHARD HOWELL, Quoque, Long Island, N. Y. Speculations on Overdominance in Man. (Illustrated)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House. *Broward Hall*, lower lobby and terrace.**

4. AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS

The American Society of Ichthyologists and Herpetologists can trace its beginning to December 27, 1913, when its first journal was published. The Society was officially organized at the American Museum of Natural History in 1916 after its journal, *Copeia*, had published more than 30 numbers. The objective of the society is the promotion of the science of cold-blooded vertebrates. Total membership, approximately 1,200.

President: CHARLES M. BOGERT, American Museum of Natural History, New York, N. Y.
Vice-President: (Conservation) JOHN TEE-VAN, New York Zoological Society, N. Y.; (Finance) GEORGE P. MEADE, Colonial Sugars Company, Gramercy, La.; and (Membership) REEVE M. BAILEY, University Museums, Ann Arbor, Mich.
Treasurer: COLEMAN J. GOIN, University of Florida, Gainesville, Fla.
Secretary: ARNOLD B. GROBMAN, Florida State Museum, Gainesville, Fla.
Representative to the Governing Board, A.I.B.S.: ARNOLD B. GROBMAN, Florida State Museum, Gainesville, Fla.
Local Committee Representative: A. F. CARR.

Room 209, Florida Union, has been reserved for the use of the American Society of Ichthyologists and Herpetologists for council and committee meetings.

Program of Thirty-Fourth Annual Meeting

SUNDAY AFTERNOON, SEPTEMBER 5

1:00 **Field Trip to Silver Springs.** Departure from south entrance of Broward Hall. Members of A.S.I.H. will be the guests of Ross Allen's Reptile Institute. Return to Gainesville by 6 p.m. Reservations should be made through Walter Auffenberg, Dept. of Biology, University of Florida, Gainesville, by September 1st.

For interested persons a longer trip (leaving early Sunday morning) to Silver Springs and Marineland is being arranged by the American Society of Limnology and Oceanography. See the program of this Society for further details.

SUNDAY EVENING, SEPTEMBER 5

8:00 **Board of Governors meeting. *Room 120, Law Building.***

MONDAY MORNING, SEPTEMBER 6

Demonstration, *Room 2, Science Hall.*

249. BLAIR, W. FRANK, University of Texas, Austin. Effects of different X-ray Dosages on Development in the Mexican toad, *Bufo valliceps*.

Joint Session of Sections A and B. *Science Reading Room, Library.* CHARLES M. BOGERT, presiding.

9:00 *250.* LINDSAY, HAGUE L., JR., University of Texas, Austin. Factors Affecting Gene Exchange between *Pseudacris nigrita* and *Pseudacris clarki.* (Illustrated)

9:25 *251.* TAVOLGA, WILLIAM N., and ROBERT W. NEELANDS, College of the City of New York. Life History of a Goby, *Bathygobius soporator.* (Illustrated, movie)

10:00 *252.* BLAIR, W. FRANK, University of Texas, Austin. Productivity versus Environmental Resistance in the Rusty Lizard, *Sceloporus olivaceus.* (Illustrated)

10:25 *253.* RIVAS, LUIS R., University of Miami Marine Laboratory, Coral Gables. A Comparison between Bahama and Nova Scotia Bluefin Tuna, *Thunnus thynnus,* with Reference to Migration and Population Identity. (Illustrated)

10:55 *254.* LOWE, C. H., University of Arizona, Tucson. Comparative Reptilian Evolution on Two Adjacent Mexican Islands, Tiburon and San Esteban. (Illustrated)

11:20 *255.* LACHNER, ERNEST A., U. S. National Museum, Washington, D. C. The Need for a Yardstick in Specifying Lower Categories in Systematic Ichthyology. (Illustrated)

11:45 *256.* INGER, ROBERT F., and HYMEN MARX, Chicago Natural History Museum. Notes on the Genus *Calamaria.* (Illustrated)

MONDAY AFTERNOON, SEPTEMBER 6

Concurrent Sections A and B

Section A. Ichthyology. *Room 357, Administration Building.* REEVE M. BAILEY, presiding.

2:00 *257.* WOODS, L. P., and R. J. INGER, Chicago Natural History Museum. Fishes of the Family Amblyopsidae. (Illustrated)

2:30 *258.* STRASBURG, DONALD W., Duke University, Durham, N. C. North-south Differentiation of Blenniid Fishes in the Central Pacific. (Illustrated)

2:55 *259.* RANDALL, JACK, University of Hawaii, Honolulu. Some Aspects of the Early Life History of the Hawaiian Surgeon Fish, *Acanthurus triastegus.* (Illustrated)

3:20 *260.* LAGLER, KARL F., and CARL L. HUBBS, University of Michigan, Ann Arbor, and Scripps Institution of Oceanography, La Jolla, Calif. Problems Arising in Revision of Hubbs and Lagler's "Fishes of the Great Lakes Region." (Illustrated)

3:35 *261.* MOORE, GEORGE C., and WILLIAM E. BURRIS, Oklahoma A. & M., Stillwater. Description of the Lateral Line System of the Pirate Perch, *Aphredoderus sayanus.* (Illustrated)

3:50 *262.* DEUBLER, E. E., JR., and EDWARD C. RANEY, Cornell University, Ithaca, N. Y. Subspecies of the Rock Bass, *Ambloplites ruprestris.* (Illustrated)

4:00 *262.a.* SHOEMAKER, HURST H., Gulf Coast Research Laboratory, Ocean Springs, Miss. The Fishes of Davis Bayou, Ocean Springs, Mississippi. (Illustrated 3¼ x 4 and 2 x 2)

4:10 *262.b.* FULLER, JEFFERSON C., and HARRY W. FREEMAN, University of South Carolina, Columbia, S. C. Fish Population Studies in South Carolina Reservoirs.

Section B. Herpetology. *Room 358, Administration Building.* GEORGE P. MEADE, presiding.

1:30 *263.* FOX, WADE, School of Medicine, Louisiana State University, New Orleans. Sperm Storage in Snakes. (Illustrated)

1:50 *264.* LEGLER, JOHN M., University of Kansas, Lawrence. Observations on *Terrapene ornata ornata.*

2:05 *265.* MARTIN, PAUL, University of Michigan, Ann Arbor. Mexican-eastern United States Biotic Affinity from a Herpetological Viewpoint. (Illustrated)

2:30 *266.* TELFORD, SAM R., University of Virginia, Charlottesville. A Study of the Florida Sand Skink, *Neoseps reynoldsi* Stejneger. (Illustrated)

3:05 *267.* THUROW, GORDON R., Bloomington, Ind. Color Phases in *Plethodon c. cinereus.* (Illustrated)

3:30 *268.* JOHNSON, RICHARD, Tennessee Wesleyan College, Athens. The Midland Water Snake, *Natrix sipedon pleuralis,* in Eastern Tennessee. (Illustrated)

3:50 *269.* BALDAUF, RICHARD J., Texas A. & M. College, College Station. Certain Aspects of the Cranial Morphology of *Bufo woodhousei woodhousei* and *Bufo valliceps.* (Illustrated)

4:15 *270.* BROWN, E. E., Davidson College, Davidson, N. C. Broods and Food of *Natrix septemvittata* Say in North Carolina. (Illustrated)

4:40 *271.* CRENSHAW, JOHN W., University of Florida, Gainesville. Some Aspects of the Biological Relationships of the Southeastern Subspecies of *Pseudemys floridana.* (Illustrated)

4:50 *271.a.* FREEMAN, HARRY W., University of South Carolina, Columbia, S. C. Amphibia and Reptilia of the Savannah River Operations Area, South Carolina.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

9:30 **Joint meeting with the Society for the Study of Evolution and the Society of Systematic Zoology. *Room 120, Law Building.* Symposium: The Origin and Evolution of the Biota of Florida.** KARL P. SCHMIDT, presiding.

TUESDAY AFTERNOON, SEPTEMBER 7

Concurrent Sections A and B

Section A. Ichthyology. *Room 357, Administration Building.* GERALD P. COOPER, presiding.

2:00 *272.* SEVERSMITH, HERBERT F., Bethesda, Md. Spermatogenesis in a Maryland Brook Lamprey, *Lampetra aepyptera.* (Illustrated)

2:35 *273.* NELSON, EDWARD M., Stritch School of Medicine, Loyola University, Chicago. The Morphological Relationships between the Swim Bladder and Ear of the Holocentridae. (Illustrated)

3:10 *274.* WOODS, L. P., Chicago Natural History Museum. Fishes of the Campeche Banks and their Relationship to Fishes of Other Parts of the Gulf of Mexico. (Illustrated)

3:25 *275.* FAHY, WILLIAM E., University of North Carolina, Institute of Fisheries Research, Morehead City, N. C. The Embryo of the Angel Shark, *Squatina dumeril* (LeSueur), and Natural History Notes on the Species in North Carolina Waters. (Illustrated)

3:45 *276.* REID, GEORGE K., JR., Texas A & M College, College Station. Breeding and Sexual Dimorphism in *Cyprinodon noviegatus* on the Louisiana Coast. (Illustrated)

4:05 *277.* MOORE, GEORGE A., and JONES D. REEVES, Oklahoma A. and M. College, Stillwater, Oklahoma. *Hadropterus pantherinus,* a New Percid Fish from Oklahoma and Arkansas. (Illustrated)

4:25 *278.* HUBBS, CLARK, University of Texas, Austin. The Effect of Light and Temperature on the Reproductive Rate of the Green Throat Darter, *Etheostoma lepidum.* (Illustrated)

Section B. Herpetology. *Room 358, Administration Building.* N. BAYARD GREEN, presiding.

1:30 *279.* MARTOF, BERNARD, University of Georgia, Athens. Some Aspects of the Ecology of *Leurognathus marmorata* Moore. (Illustrated)

1:50 *280.* AUFFENBERG, WALTER, University of Florida, Gainesville. Clinal Variation in the Racers, *Coluber,* of North America. (Illustrated)

2:25 *281.* PYBURN, WILLIAM F., University of Texas, Austin. Dynamics of a Natural Population of the Cricket Frog, *Acris gryllus crepitans.* (Illustrated)

2:50 *282.* MOSIMANN, JAMES E., University of Michigan, Ann Arbor. Variation and Relative Growth in Plastral Scutes of the Turtle, *Kinosternon integrum* LeConte. (Illustrated)

3:15 *283.* DUELLMAN, WILLIAM E., University of Michigan, Ann Arbor. Ecological Distribution of Amphibians and Reptiles in Southern Florida. (Illustrated)

3:40 *284.* PETTUS, DAVID, University of Texas, Austin. The Toxicity of *Scaphiopus hurteri* Venom in Mice. (Illustrated)

4:00 *285.* HIGHTON, RICHARD, University of Florida, Gainesville. A Study of Variation in the Short-tailed Snake, *Stilosoma extenuatum.* (Illustrated)

4:25 *286.* JAMESON, DAVID L., University of Oregon, Eugene. Ecological Factors Affecting the Genetic Structure of Natural Populations of Amphibia.

4:35 *286.a.* MECHAM, JOHN S., University of Texas, Austin, Texas. The Status of Two Southwestern Skinks, *Eumeces gaigei* and *Eumeces taylori.* (Illustrated)

TUESDAY EVENING, SEPTEMBER 7

6:30 **Banquet. *Gainesville Golf and Country Club.*** Presidential Address: CHARLES M. BOGERT, American Museum of Natural History, New York. "Amphibian Calls and Their Significance."

WEDNESDAY MORNING, SEPTEMBER 8

Concurrent Sections A and B

Section A. Ichthyology. *Room 357, Administration Building.* ROBERT R. MILLER, presiding.

9:00 *287.* BAILEY, REEVE M., HOWARD E. WINN, and C. LOVETT SMITH, University of Michigan, Ann Arbor. Fishes from the Escambia River, Alabama and Florida, with Ecologic and Taxonomic Notes. (Illustrated)

9:25 *288.* HUBBS, CLARK, and KIRK STRAWN, University of Texas, Austin. Hybridization of Texas Darters. (Illustrated)

9:50 *289.* GOSLINE, WILLIAM, University of Hawaii. Honolulu. A Plea for a Broader Base in Systematic Ichthyology.

10:15 *290.* STRAWN, KIRK, University of Texas, Austin. Mortality Rate of Eggs and Larvae of *Etheostoma lepidum.*

10:35 *291.* WOOLCOTT, WILLIAM S., and E. C. RANEY, Cornell University, Ithaca. Status of the Carolina Race of Striped Bass, *Roccus saxatilis.* (Illustrated)

10:55 *292.* MILLER, R. R., University of Michigan, Ann Arbor. Speciation in the Middle American Fishes of the Genus *Profundulus.* (Illustrated)

Section B. Herpetology. *Room 358, Administration Building.* NORMAN HARTWEG, presiding.

9:00 *293.* NEILL, WILFRED T., Ross Allen Reptile Institute, Silver Springs, Florida. Metachrosis in Snakes.

9:30 *294.* BLEAKNEY, SHERMAN, National Museum of Canada, Ottawa. The Nine Herpetofaunal Sections of Nova Scotia. (Illustrated)

9:50 *295.* TIHEN, JOE A., Harper, Kansas. Comments on Ambystomid Phylogeny.

10:10 *296.* MOULTON, JAMES M., Bowdoin College. Brunswick, Maine. The Coraco-radialis Proprius of *Ambystoma maculatum.* (Illustrated)

10:30 *297.* TINKLE, DONALD W., and ROBERT G. WEBB, Tulane University, New Orleans. Notes on the *Sternotherus carinatus* Complex with a Description of a New Form. (Illustrated)

10:55 *298.* ZWEIFEL, RICHARD G., University of California, Berkeley. Some Aspects of Ecology and Distribution in *Rana boylei* and its Relatives. (Illustrated)

11:20 *299.* SAVAGE, JAY, Stanford University, Stanford, Calif. The Iguanid Genera, *Urosaurus* and *Uta,* with Remarks on Related Groups. (Illustrated)

11:45 *300.* AXTEL, RALPH W., University of Texas, Austin. The Elements of Systematics and Zoogeography in Two Species of the Lizard, Genus *Holbrookia.* (Illustrated)

WEDNESDAY AFTERNOON, SEPTEMBER 8

Joint Session A & B and Business Meeting. *Science Reading Room, Library.* COLEMAN J. GOIN, presiding.

2:00 *301.* RANEY, EDWARD C., Cornell University, Ithaca. A Study of Natural Pickerel Hybrids: *Esox niger* x *Esox americanus americanus.* (Illustrated)

2:20 *302.* WASSERMAN, AARON, University of Texas, Austin. Factors Affecting Interbreeding of Allopatric and Sympatric Populations of Spadefoot Toads (Genus, *Scaphiopus*). (Illustrated)

2:45 *303.* WINN, HOWARD E., Lerner Marine Laboratory, Miami. Evolution of Behavior in the Darters. (Pisces—Percidae). (Illustrated)

3:15 *304.* STEBBINS, ROBERT C., University of California, Berkeley. Observations on the Reproductive Habits of the Tadpole-carrying Frog, *Phyllobates subpunctatus.* (Illustrated)

3:45 *305.* FITCH, HENRY S., University of Kansas, Lawrence. Growth and Sexual Maturity in Some Common Reptiles. (Illustrated)

4:00 **Business Meeting.**

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

5. AMERICAN SOCIETY OF LIMNOLOGY AND OCEANOGRAPHY

The American Society of Limnology and Oceanography was organized in St. Louis, January 1, 1936, as the Limnological Society of America, to promote the interests of research in fresh-water biology and closely related subjects. The change to the present title reflects an inclusion of interests in marine biology and physical oceanography. Total membership, 1,153.

President: THURLOW C. NELSON, Rutgers University, New Brunswick, N.J.
Vice-President: WILLIAM E. RICKER, Pacific Biological Station, Nanaimo, B.C., Canada.
Secretary-Treasurer: BOSTWICK H. KETCHUM, Woods Hole Oceanographic Institution, Woods Hole, Mass.
Local Committee Representative: H. T. ODUM.

Room 16, Business Administration Building has been reserved for the use of the American Society of Limnology and Oceanography during the convention, for council and committee meetings.

SUNDAY, SEPTEMBER 5

8:00 **All day field trip** to Silver Springs, Orange Springs and lakes of interest en route; point of departure Broward Hall; Howard T. Odum, leader.

MONDAY MORNING, SEPTEMBER 6

Joint Session with Ecological Society of America, Section A. *Room 18, Business Administration Building.* F. G. WALTON SMITH, presiding.

9:00 *306.* PHELPS, AUSTIN, University of Texas, Austin, Tex. Observations on Thermophilic Protozoa. (Illustrated 3¼ x 4)

9:20 *307.* WALLACE, JOHN H., Academy of Natural Sciences, Philadelphia, Pa. Diatoms in the Saprobic System. (Illustrated 3¼ x 4)

9:40 *308.* McNULTY, J. K., University of Miami, Miami, Fla. Some Ecological Conditions Associated with Sewage Pollution in Biscayne Bay, Fla.

10:00 *309.* NATELSON, DELLE, University of Wisconsin, Madison, Wis. Aquatic Plant Communities in Wisconsin Lakes. (Illustrated 2 x 2)

10:20 *310.* LEOPOLD, ESTELLA B., Yale University, New Haven, Conn. Lake Durham, a Cary-Mankato Record Deposition in Southern Connecticut. (Illustrated 3¼ x 4)

10:40 *311.* FREY, DAVID G., Indiana University, Bloomington, Ind. The Animal Microfossils in the Sediments of Längsee, a Meromictic Lake in Austria. (Illustrated 2 x 2)

11:00 *312.* BOUSFIELD, EDWARD L., National Museum of Canada, Ottawa, Ont. Distributional Ecology of Barnacles on the Atlantic Coast of Canada. (Illustrated 3¼ x 4)

11:15 *313.* KISER, ROY S., and J. C. IRELAND. Florida Southern College, Lakeland, Fla. Limnological Studies of Lakes in Polk County, Fla. (Illustrated 16 mm. movies)

11:30 *314.* PATRICK, RUTH, Academy of Natural Sciences, Philadelphia, Pa. A Discussion of the Ecological Characteristics of Various Types of Streams. (Illustrated 2 x 2)

11:45 *315.* WILLIAMS, AUSTIN B., University of North Carolina, Chapel Hill, N. C. A Contribution to the Life Histories of Commercial Shrimp, (Penaeidae) in North Carolina. (Illustrated 3¼ x 4)

MONDAY AFTERNOON, SEPTEMBER 6

Contributed papers. Energy and Chemical Cycles. *Room 18, Business Administration Building.* E. L. PIERCE, presiding.

2:00 *316.* KETCHUM, B. H., and N. C. CORWIN, Woods Hole Oceanographic Institution, Woods Hole, Mass. The Significance of Organic Phosphorus Determinations in Oceanic Waters. (Illustrated 3¼ x 4)

2:15 *317.* RICHARDS, F. A., Woods Hole Oceanographic Institution, Woods Hole, Mass. Preliminary Notes on the Vertical Distribution of Silicate in the Southern North Atlantic, January-April, 1952. (Illustrated 3¼ x 4)

2:23 *318.* GREENFIELD, L. J., University of Miami, Miami, Fla. Inorganic Phosphate Measurement in the Gulf Stream.

2:40 *319.* VACCARO, R., Woods Hole Oceanographic Institution, Woods Hole, Mass. Nitrogen and Dissolved Oxygen Profiles in the Atlantic Ocean between 0 deg. and 30 deg. N. latitude. (Illustrated 3¼ x 4)

2:50 *320.* RYTHER, JOHN H., Woods Hole Oceanographic Institution, Woods Hole, Mass. The Ratio of Photosynthesis to Respiration in Marine Phytoplankton and its Effect upon the Measurement of Productivity. (Illustrated 3¼ x 4)

3:05 *321.* VERDUIN, JACOB, Franz Theodore Stone Institute of Hydrobiology, Put-in-Bay, Ohio. Energy Fixation and Utilization by Natural Plankton Communities in Western Lake Erie.

3:15 *322.* CURL, HERBERT, JR., Oceanographic Institute, Florida State University, Tallahassee, Fla. The Pattern of Phosphate Phosphorous Distribution in Western Lake Erie. (Illustrated 3¼ x 4)

3:30 *323.* BRITT, N. WILSON, Franz Theodore Stone Institute of Hydrobiology, Put-in-Bay, Ohio. Stratification in Western Lake Erie in Summer of 1953. Effects on the Hexagenia (Ephemeroptera) Population. (Illustrated 2 x 2)

4:15 Demonstration Walk to Gator Sink; departure from above session.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Contributed papers. Red Tide and Plankton Chemistry. *Room 18, Business Administration Building.* ALBERT W. COLLIER, JR., presiding.

9:00 *324.* LACKEY, J. B., University of Florida, Gainesville, Fla. Local Distribution Patterns of Red Tide Dinoflagellates. (Illustrated 3¼ x 4)

9:15 *325.* HELA, ILMO, DONALD deSYLVA, and P. F. SMITH, University of Miami, Coral Gables, Fla. Hydrographic and Meteorological Factors Affecting the Occurrence of the Red Tide.

9:30 *326.* ODUM, HOWARD T., JAQUELINE HYNES, and JOHN V. SLATER, University of Florida, Gainesville, Fla. A Suggestion Concerning the Use of Charcoal for Possible Control of Red Tide Blooms. (Illustrated 3¼ x 4)

9:45 *327.* COLLIER, ALBERT W., JR., U. S. Fish and Wildlife Service, Galveston, Tex. The Ecological Basis of the Red Tide.

10:00 *328.* WILSON, W. B., U. S. Fish and Wildlife Service, Galveston, Tex. Relations between Field and Laboratory Studies of *Gymnodinium brevis* Davis.

10:10 *329.* CREITZ, G. I., and F. A. RICHARDS, Woods Hole Oceanographic Institution, Woods Hole, Mass. The Use of Millipore Membrane Filters in the Estimation of Plankton Pigments. (Illustrated 3¼ x 4)

10:25 *330.* RICHARDS, F. A., and G. I. CREITZ, Woods Hole Oceanographic Institution, Woods Hole, Mass. The Distribution of Chlorophylls and Carotenoids in Natural Plankton and in Cultures of Some Plankton Organisms. (Illustrated 3¼ x 4)

10:40 *331.* NORTON, DANIEL R., U. S. Geological Survey, Washington, D. C. and Woods Hole Oceanographic Institution, Woods Hole, Mass. Mineral Content of Marine Plankton and Sargassum. (Illustrated 3¼ x 4)

10:55 *332.* MARSHALL, NELSON, Oceanographic Institute, Florida State University, Tallahassee, Fla. Changes in Chlorophyll Content of Marine Phytoplankton Associated with Depth. (Illustrated 3¼ x 4)

TUESDAY AFTERNOON, SEPTEMBER 7

Contributed papers. Lakes and Streams. *Room 18, Business Administration Building.* NELSON MARSHALL, presiding.

2:00 *333.* DENDY, JACK S., Alabama Polytechnic Institute, Auburn, Ala. Bottom Fauna in Ponds with Largemouth Bass only and with a Combination of Largemouth Bass plus Bluegill.

2:15 *334.* CLEMENS, HOWARD P., and WOODROW H. JONES, University of Oklahoma, Norman, Okla. Toxicity of Brine from Oil Wells. (Illustrated 3¼ x 4)

2:30 *335.* ODUM, H. T., University of Florida, Gainesville, Fla. Further Studies on Productivity of Silver Springs, Fla. (Illustrated 3¼ x 4)

2:45 *336.* TEAL, JOHN M., Harvard University, Cambridge, Mass. The Ecology of a Cold Spring. (Illustrated 2 x 2)

2:55 *337.* WALLACE, NATALIE MONG, Academy of Natural Sciences, Philadelphia, Pa. The Heterotrophic Bacterial Population of a Fresh Water Stream. (Illustrated 3¼ x 4)

3:10 *338.* OLIVE, JOHN R., Colorado A and M College, Ft. Collins, Colo. Some Structural Characteristics of Plankton Populations in High Mountain Lakes of Colorado. (Illustrated 2 x 2)

3:25 *339.* VALLENTYNE, J. R., and YVONNE S. SWABEY, Queen's University, Kingston, Ontario, Canada. A New Sediment Core from Lower Linsley Pond, Conn. (Illustrated 3¼ x 4)

4:30 Auto trip to Newnan's Lake, a phosphatic, darkwater, softwater, shad, hyacinth lake, 4 miles directly east of Gainesville. Follow University Ave. east in a straight line (no turns) to the lake.

AMERICAN SOCIETY OF LIMNOLOGY AND OCEANOGRAPHY

TUESDAY EVENING, SEPTEMBER 7

8:00 **Informal Forum** on news and progress. ***Room 18, Business Administration Building.***

WEDNESDAY, SEPTEMBER 8

Phycological Society field trip. All day field trip to 10 freshwater localities and springs down the west coast region. Leader, L. A. Whitford, N. C. State College, Raleigh, N. C. See "Field Trips" in General Information.

WEDNESDAY MORNING, SEPTEMBER 8

Contributed papers. Physical Sciences. ***Room 18, Administration Building.*** F. C. W. OLSON, presiding.

9:00 *340.* AUSTIN, GEORGE B., Texas A. and M., College Station, Tex. The July 1954 Cruise of the A. A. JAKKULA. (Illustrated 2 x 2)

9:20 *341.* HELA, ILMO, and C. A. CARPENTER, University of Miami, Miami, Fla. Water Exchange in the Biscayne Bay.

9:35 *342.* CHEW, FRANK, University of Miami, Miami, Fla. The Velocity Structure and the Transport of the Florida Current.

9:50 *343.* MILLER, C. E., E. C. LAFOND, and G. B. DOWLING, U. S. Navy Mine and Countermeasures Station, Panama City, Fla. The Sound Velocity Structure of the Gulf of Mexico Waters off Panama City, Fla. (Illustrated 2 x 2)

10:00 *344.* BRYSON, R. A., and R. A. RAGOTZKIE, University of Wisconsin, Madison, Wis. Rate of Water Replacement in a Bay of Lake Mendota, Wisconsin. (Illustrated 2 x 2)

10:15 *345.* CHEW, F., and L. P. WAGNER, University of Miami, Miami, Fla. Note on Correcting G. E. K. Observations of Florida Current off Miami for Tidal Current.

10:25 *346.* OLSON, F. C. W., Florida State University, Tallahassee, Fla. Thermocline or Phynocline? (Illustrated 3¼ x 4)

WEDNESDAY AFTERNOON, SEPTEMBER 8

Contributed papers. Estuarine Science. ***Room 18, Administration Building.*** PHILIP A. BUTLER, presiding.

2:00 *347.* HAVEN, D. S., Virginia Fisheries Laboratory, Gloucester Point, Va. A Survey of the Distribution and Abundance of Young Croakers in the York and Pamunkey Rivers, Virginia. (Illustrated 3¼ x 4)

2:15 *348.* DARNELL, R. M., JR., Tulane University, New Orleans, La. Lake Pontchartrain, a Study in Estuarine Ecology.

2:30 *349.* BLUM, JOHN L., and JOHN T. CONOVER, Woods Hole Oceanographic Institution, Woods Hole, Mass. The Discovery of a *Vaucheria* Belt in the Salt Marshes of Cape Cod and the Gulf of Maine.

2:40 *350.* BARLOW, J. P., Texas A. and M., College Station, Tex. Physical and Biological Processes Determining the Distribution of Zooplankton in a Tidal Estuary. (Illustrated 3¼ x 4)

2:55 *351.* POMEROY, LAWRENCE R., New Jersey Oyster Research Laboratory, Bivalve, N. J. The Distribution and Intensity of Oyster Setting in Delaware Bay, N. J. (Illustrated 3¼ x 4)

3:05 *352.* CHESTNUT, A. F., and W. E. FAHY, Institute of Fisheries Research, Morehead City, N. C. The Relationship of Oyster Setting to Light. (Illustrated 3¼ x 4)

3:20 *353.* BUTLER, P. A., Fish and Wildlife Service, Pensacola, Fla. Seasonal Incidence of Estuarine Sedentary Animals in the Gulf of Mexico Littoral. (Illustrated 2 x 2)

3:35 *354.* WILLIAMS, L. G., Furman University, Greenville, S. C. Ecology of *Codium decorticatum.* (Illustrated 3¼ x 4)

3:50 *355.* HASKIN, HAROLD H., Rutgers University, New Brunswick, N. J. The Decline of the Natural Seed Oyster Beds of Delaware Bay. (Illustrated 3¼ x 4)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

BIOLOGICAL SCIENCES EXHIBIT HALL

The Biological Sciences Exhibit is worth your attention. Arrange your schedule so you may enjoy a leisurely visit. Many outstanding book publishers and manufacturers of scientific equipment will have their products on display. Place: Broward Hall.

6. AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

The American Society of Plant Physiologists was organized in March 1924, with its major objective the encouragement of plant physiology, both as a pure science and as an applied phase of botanical research. Through its journal, *Plant Physiology*, it promotes the publication of the results of physiological research and through awards encourages such research. Total membership, 1,100.

President: T. C. BROYER, University of California, Berkeley, Calif.
Vice-President: ALDEN S. CRAFTS, University of California, Davis, Calif.
Secretary: AUBREY W. NAYLOR, Duke University, Durham, N. C.
Executive Secretary-Treasurer: J. FISHER STANFIELD, Miami University, Oxford, Ohio.
Representative on the Governing Board, A.I.B.S.: P. J. KRAMER, Duke University, Durham, N. C.
Local Committee Representative: R. W. BLEDSOE.

Lounge, Fourth Floor East, Broward Hall has been reserved for the entire convention period for the use of the American Society of Plant Physiologists for council, committee and other small group meetings.

Program of the Twenty-Ninth Annual Meeting

SUNDAY EVENING, SEPTEMBER 5

8:00 **Executive Committee Meeting,** American Society of Plant Physiologists. ***Lounge, Fourth Floor, East, Broward Hall.***

MONDAY MORNING, SEPTEMBER 6

Concurrent Sessions 3A and 3B

Session 3A. Joint Meeting with the Physiological Section of the Botanical Society of America. *Chorus Room, Music Building.* FOLKE SKOOG, presiding.

8:30 *356.* WIGGANS, S. C., and K. J. FREY, Iowa State College, Ames, Iowa. (P) The Effect of Nitrogen on Growth and Development of Oats. (Illustrated 2 x 2)

8:45 *357.* FAULL, ANNA F., 72 Fresh Pond Lane, Cambridge 38, Mass. (B) Germination of Pollen in Sugar Series both with and without Calcium Salts. (Illustrated 2 x 2)

9:00 *358.* O'KELLEY, JOSEPH C., University of Alabama, Tuscaloosa, Ala. (P) The Role of External Carbohydrates in the *in vitro* Growth and Respiration of Pollen Tubes. (Illustrated 2 x 2)

9:15 *359.* NELSON, PETER K., Brooklyn Botanic Garden, 1000 Washington Avenue, Brooklyn 25, N. Y. (B) Culture of Embryos of *Ilex opaca* and *I. aquifolium in vitro.* (Illustrated 2 x 2)

9:30 *360.* MERGEN, FRANCOSIS, Southeastern Forest Experiment Station, P. O. Box 92, Lake City, Fla. (P) Vegetative Propagation Techniques for Genetic Studies of Slash Pine (*Pinus elliottii*, Engelm.). (Illustrated 2 x 2)

9:45 *361.* LOCKHART, JAMES A., and KARL C. HAMNER, University of California, Los Angeles, Calif. (P) Partial Reactions in the Formation of the Floral Stimulus in *Xanthium.* (Illustrated 3¼ x 4)

10:00 *362.* SALISBURY, FRANK, and JAMES BONNER, California Institute of Technology, Pasadena, Calif. (P) Kinetics of the Photoinductive Dark Process. (Illustrated 2 x 2)

10:20 *363.* SPEAR, IRWIN, University of Texas, Austin, Texas. (P) Induction of Dark CO_2-Fixation by *Kalanchoe Blossfeldiana* in response to Treatment with Short Days. (Illustrated 3¼ x 4)

10:35 *364.* HIGHKIN, HARRY R., California Institute of Technology, Pasadena, Calif. (P) Chemical Factors Affecting Vernalization in Peas. (Illustrated 2 x 2)

10:50 *365.* FRIEND, D. J. C., Botany and Plant Pathology Division, Science Service, Ottawa, Canada. (P) The Dynamics of Vernalization in Winter Rye. (Illustrated 2 x 2)

11:05 *366.* VLITOS, A. J., and WERNER MEUDT, Boyce Thompson Institute for Plant Research, Inc., Yonkers 3, N. Y. (P) The Stimulation of Flowering in Spinach *(Spinacia oleraceae* L. var. *Nobel)* as a Result of Low Temperature Seed Treatments. (Illustrated 3¼ x 4; 2 x 2)

11:15 *367.* SOROKIN, CONSTANTINE, and JACK MYERS, University of Texas, Austin, Texas. (B) Growth and Photosynthetic Characteristics of a Thermotolerant *Chlorella.* (Illustrated 3¼ x 4)

11:30 *368.* KRATZ, WILLIAM A., and JACK MYERS, University of Texas, Austin, Texas. (B) Growth and Characteristics of Two Blue-Green Algae. (Illustrated 3¼ x 4)

Session 3B. Joint Meeting with the Physiological Section of the Botanical Society of America. *Room 207, Leigh Hall.* C. A. SWANSON, presiding.

8:30 *369.* RABIDEAU, GLENN S., Biology Division, Argonne National Laboratory, Lemont, Ill. (P). Light Reflectance by Radiation Damaged Leaves. (Illustrated 3¼ x 4)

8:40 *370.* RABIDEAU, GLENN S., Biological and Medical Division, Argonne National Laboratory, Lemont, Ill. (B) Morphology of Radiation-Damaged Leaves. (Illustrated 3¼ x 4)

8:55 *371.* SPARROW, ARNOLD H., and LLOYD A. SCHAIRER, Biology Division, Brookhaven National Laboratory, Upton, Long Island, N. Y. (B) Tumor Formation in Nicotiana Hybrids Exposed to Chronic Gamma Irradiation. (Illustrated 3¼ x 4)

AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

9:10 *372.* SCULLY, N. J., T. RALL, and G. BECKER, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Ill. (P) Oil Content and Abnormal Growth Behavior of Radiocarbon Labeled Soybean Seed. (Illustrated 3¼ x 4)

9:25 *373.* WATANABE, R., J. SKOK, and N. J. SCULLY, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Ill. (P) Effect of Internal Ionization by C^{14} on the Nitrogen and Ascorbic Acid Content of Red Kidney Beans. (Illustrated 3¼ x 4)

9:40 *374.* SCHRANK, A. R., University of Texas, Austin, Texas. (P) Oxygen Consumption and Growth Curvatures of Avena Coleoptiles Grown from Irradiated Seeds. (Illustrated 3¼ x 4)

9:55 *375.* MEYER, GEORGE H., and HILDA F. ROSENE, University of Texas, Austin, Texas. (P) Effects of Temperature on Water Transport in Excised Onion Roots. (Illustrated 3¼ x 4)

10:10 *376.* HOWELL, ROBERT W., U. S. Regional Soybean Laboratory, Urbana, Ill. (P) The Relationship of Oil Level in Soybeans to Temperature During the Pod Filling Stage. (Illustrated 2 x 2; blackboard)

10:25 *377.* BARTON, LELA V., Boyce Thompson Institute for Plant Research, Inc., Yonkers 3, N. Y. (B) A Comparison of Three Sub-Freezing Temperatures for Conifer Seed Storage. (Illustrated 2 x 2; 3¼ x 4)

10:35 *378.* BENDA, GERD T. A., and AUBREY W. NAYLOR, Osborn Botanical Laboratory, Yale University, New Haven, Conn. and Duke University, Durham, N. C. (P) The Effect of Heat on Plants Recovered from the Tobacco Ringspot Disease. (Illustrated 3¼ x 4)

10:50 *379.* MINSHALL, WILLIAM H., Science Service Laboratory, University Sub. P. O., London, Canada. (P) Translocation Path and Place of Action of 3-(4-chlorophenyl)-1:1-dimethylurea in Bean and Tomato. (Illustrated 2 x 2)

11:05 *380.* WEINTRAUB, R. L., J. H. REINHART, R. A. SCHERFF, and L. C. SCHISLER, Camp Detrick, Frederick, Md. (P) Translocation and Metabolism of 2, 4-D in Dormant Cherry Seedlings. (Illustrated 2 x 2)

11:20 *381.* HAY, JAMES R., and KENNETH V. THIMANN, Harvard University, Cambridge, Mass. and Atkins Garden and Research Laboratory, Cienfuegos, Cuba. (B) Translocation of High Concentrations of 2, 4-D and 2, 4, 5-T. (Illustrated 3¼ x 4)

MONDAY AFTERNOON, SEPTEMBER 6

Joint Meeting with the Biometrics Society (ENAR) and the Physiological Section of the Botanical Society of America. ***Walker Auditorium.*** Invitational Papers on **Experimental and Design Topics.** H. J. DYER, presiding.

2:00 *382.* KOCH, E. J., U.S.D.A. Plant Industry Station, Beltsville, Md. The Role and Application of Design Principles in Botanical Research.

2:10 *383.* STEWARD, F. C., and E. M. SHANTZ, Cornell University, Ithaca, N. Y. The Experimental Control of Variables and Variability in the Growth of Tissue Cultures.

3:30 *384.* ARONOFF, S., Iowa State College, Ames, Iowa. Sampling Problems in Tracer Work.

4:10 *385.* HOPP, H., U.S.D.A. Foreign Agricultural Service, Washington, D. C. The Use of Discriminant Functions in Botanical Research.

MONDAY EVENING, SEPTEMBER 6

6:30 **Annual Banquet,** American Society of Plant Physiologists. ***Student Service Center.*** Announcement of Stephen Hales Award. Announcement of Charles Reid Barnes Life Membership Award.

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Concurrent Sessions 4A and 4B

Session 4A. Joint Meeting with the Physiological Section of the Botanical Society of America. ***Chorus Room, Music Building.*** T. C. BROYER, presiding.

8:30 *386.* WEDDING, RANDOLPH T., and LOUIS C. ERICKSON, University of California, Citrus Experiment Station, Riverside, Calif. (P) Effect of Ozonated Hexene on the Permeability of Plant Cells. (Illustrated 2 x 2)

8:40 *387.* EPSTEIN, EMANUEL, and JAMES E. LEGGETT, U. S. Bureau of Plant Industry Station, Beltsville, Md. (P) Exchange and Transport of Divalent Cations in Barley Roots. (Illustrated 3¼ x 4; Blackboard)

8:55 *388.* LEGGETT, JAMES E., and EMANUEL EPSTEIN, U. S. Bureau of Plant Industry Station, Beltsville, Md. (P) Exchange and Transport of Divalent Anions in Barley Roots. (Illustrated 3¼ x 4; Blackboard)

9:10 *389.* MARTIN, D. C., and S. H. WITTWER, Michigan State College, East Lansing, Mich. (P) Absorption and Distribution of Radiostrontium in Certain Plants. (Illustrated 2 x 2)

9:20 *390.* GUSTAFSON, F. G., University of Michigan, Ann Arbor, Mich. (P) Factors Influencing the Absorption and Distribution of Cobalt 60 in Young Bean Plants. (Illustrated 3¼ x 4)

9:35 *391.* HAGEN, C. E., and H. T. HOPKINS, U. S. Bureau of Plant Industry Station, Beltsville, Md. (P) Kinetics of Phosphate Absorption by Barley Roots Involving Ionic Species of Orthophosphate. (Illustrated 3¼ x 4)

9:50 *392.* BAKER, JAMES, W. M. DUGGER, JR., and H. G. GAUCH, University of Maryland, College Park, Md. (P) Certain Effects of Boron on the Water Relations of Plant Cells. (Illustrated 2 x 2; Blackboard)

10:05 *393.* DUGGER, W. M., JR., H. G. GAUCH, and J. W. MITCHELL, University of Maryland, College Park, Md. and U. S. Bureau of Plant Industry Station, Beltsville, Md. (P) Essential Elements Other Than Boron and Their Effects on Sugar Movement in Plants. (Illustrated 2 x 2; Blackboard)

10:20 *394.* SKOK, JOHN, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Ill. (P) The Substitution of Complexing Substances for Boron in Plant Growth. (Illustrated 3¼ x 4)

10:25 *395.* ALLEN, M. B., and DANIEL I. ARNON, University of California, Berkeley, Calif. (P) The Mineral Nutrition of Algae. The Sodium Requirement of *Anabaena cylindrica* Lemm. (Illustrated 3¼ x 4)

10:40 *396.* SKOK, JOHN, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Ill. (P) Absorption and Utilization of Isotopic Nitrogens by Buckwheat. (Illustrated 3¼ x 4)

10:50 *397.* THOMAS, WILLIAM H., and ROBERT W. KRAUSS, University of Maryland, College Park, Md. (P) Nitrogen Metabolism in *Scenedesmus obliquus* (Turp.) Kutz. as Affected by Environmental Changes. (Illustrated 2 x 2)

11:05 *398.* HACSKAYLO, JOHN, Delta Branch Experiment Station and the U. S. Cotton Field Station, Stoneville, Miss. (P) Responses of Tomato Plants to Ammoniacal and Nitrate Nitrogen on Gravel and Pumice Substrates. (Illustrated 3¼ x 4)

11:20 *399.* BROYER, T. C., A. B. CARLTON, C. M. JOHNSON, and P. R. STOUT, University of California, Berkeley, Calif. (P) Chlorine: A Micronutrient Element for Higher Plants. I. Techniques, Required Levels, Symptomology with Tomato. (Illustrated 2 x 2)

11:35 *400.* CARLTON, A. B., C. M. JOHNSON, P. R. STOUT, and T. C. BROYER, University of California, Berkeley, Calif. (P) Chlorine: A Micronutrient for Higher Plants. II. Species Variation in Symptomology and Composition. (Illustrated 2 x 2)

Session 4B. Joint Meeting with the Physiological Section of the Botanical Society of America. *Walker Auditorium.* JAMES BONNER, presiding.

8:30 *401.* WITHNER, CARL L., and TEDDY SARDINSKY, Brooklyn College, Brooklyn 10, N. Y. (P) Phytase and Phosphorus in Germinating Corn Seedlings. (Illustrated 3¼ x 4)

8:45 *402.* WITHNER, CARL L., and HARRIET B. ROBERTS, Brooklyn College, Brooklyn 10, N. Y. (P) Phytin-Inositol Relationship in Germinating Corn Seedling. (Illustrated 3¼ x 4)

8:55 *403.* TOLBERT, N. E., and H. WIEBE, Biology Division, Oak Ridge National Laboratory and UT-AEC Agricultural Research Program, Oak Ridge, Tenn. (P) Organophosphorus Compounds of the Xylem Sap. (Illustrated 3¼ x 4)

9:10 *404.* TOLBERT, N. E., Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. (P) Formate Metabolism in Plants. (Illustrated 3¼ x 4)

9:25 *405.* TAYLOR, J. HERBERT, RACHEL McMASTER, and MARIA CALUYA, Columbia University, New York, N. Y. (B) Quantitative Changes in DNA in Relation to Incorporation of P^{32}. (Illustrated 3¼ x 4)

9:40 *406.* VITTORIO, P. V., G. KROTKOV, and G. B. REED, Queen's University, Kingston, Ontario. (P) Absorption and Utilization of C^{14} Glucose by Detached Wheat Leaves. (Illustrated 3¼ x 4)

9:55 *407.* CHORNEY, W., and N. J. SCULLY, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Ill. (P) Carbon Assimilation and Turn-Over in *Hevea brasiliensis.* (Illustrated 3¼ x 4)

10:10 *408.* ZILL, L. P., and A. R. KRALL, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. (P) Phosphorylated Compounds in Plants: Separation in Groups by Ion-Exchange Chromatography. (Illustrated 3¼ x 4)

10:25 *409.* SCHOPMEYER, CLIFFORD S., Southeastern Forest Experiment Station, Lake City Research Center, P. O. Box 92, Lake City, Fla. Relationship Between Oleoresin Yields and Growth of Naval Stores Pines. (Illustrated 2 x 2)

410. Withdrawn.

10:40 *411.* POWELL, ROBERT D., University of Florida, Gainesville, Fla. (P) Pyruvic Acid as a Caron Source of Cellulose Production in *Acetobacter xylinum.* (Illustrated 3¼ x 4)

10:55 *412.* WITHROW, R. B., W. H. KLEIN and V. B. ELSTAD, Smithsonian Institution, Washington, D. C. (P) The Action Spectrum of Photomorphogenesis in the Bean Hypocotyl. (Illustrated 3¼ x 4)

Read by title.

11:10 *413.* SIEGELMAN, H. W., U. S. Department of Agriculture, Wenatchee, Wash. (P) The Quercetin Glycosides of Grimes Golden Apple Skin. (Illustrated 3¼ x 4)

TUESDAY AFTERNOON, SEPTEMBER 7

Concurrent Sessions 2A and 2B

Session 2A. Joint Meeting with the Physiological Section of the Botanical Society of America. *Chorus Room, Music Building.* SOLON GORDON, presiding.

1:30 *414.* JACOBS, WILLIAM P., Princeton University, Princeton, N. J. (B) The Physiological Mechanism of a Natural Abscission-Speeding Effect. (Illustrated 3¼ x 4)

1:45 *415.* PRATT, HARLAN K., University of California, Davis, Calif. (P) The Specificity of the Triple Response of Etiolated Pea Seedlings as a Bioassay for Ethylene. (Illustrated 2 x 2)

2:00 *416.* LOTT, JAMES R., and HILDA F. ROSENE, University of Texas, Austin, Texas. (P) Effects of 4, 6-DNC on Oxygen Uptake and Water Influx in Excised Onion Roots. (Illustrated 3¼ x 4)

2:15 *417.* ROBERTS, R. H., University of Wisconsin, Madison 6, Wis. (P) The Production of Plant Tumors (Callus) and Proliferations by Chemicals and their Inhibition by a Naturally Occurring Antiauxin. (Illustrated 3¼ x 4)

2:30 *418.* BOLL, WILLIAM G., Plant Research Institute, University of Texas and The Clayton Foundation for Research. (P) The Effect of Ethionine on the Growth of Excised Tomato Roots. (Illustrated 3¼ x 4)

2:45 *419.* DYER, HUBERT J., and NESTOR E. CAROSELLI, Brown University, Providence 12, R. I. (B) Some Physiological Effects of Active Fractions of Verticillium Toxin on Tomato. (Illustrated 3¼ x 4)

3:00 *420.* GRAY, REED A., Research Laboratories, Chemical Division, Merck and Co., Inc., Rahway, N. J. (B) The Inhibitory Effect of an Antibiotic from *Nocardia* on Two Plant Viruses in Intact Plants. (Illustrated 3¼ x 4)

3:15 *421.* HEMPHILL, D. D., and R. N. GOODMAN, University of Missouri, Columbia, Mo. (P) The Effects of Synthetic Plant Growth Regulators on the Control of *Erwinia amylovora* by Streptomycin and Terramycin. (Illustrated 3¼ x 4; 2 x 2)

3:30 *422.* BONDE, ERIK K., California Institute of Technology, Pasadena, Calif. (P) A Growth Inhibitor Extracted from Xanthium Leaves. (Illustrated 2 x 2)

3:45 *423.* CARNS, HARRY R., JOHN HACSKAYLO and J. LORENE EMBRY, Delta Branch Experiment Station and the U. S. Cotton Field Station, Stoneville, Miss. (P) Relation of an Indole-3-Acetic Acid Inhibitor to Cotton Boll Development. (Illustrated 2 x 2)

4:00 *424.* STEWART, JOHN W., and AUBREY W. NAYLOR, Duke University, Durham, N. C. (P) Isolation of a Seed Germination Inhibitor from Tomato Juice. (Illustrated 3¼ x 4)

Session 2B. Joint Meeting with the Physiological Section of the Botanical Society of America. *Walker Auditorium.* EDWARD TOLBERT, presiding.

1:30 *425.* BOGORAD, LAWRENCE, University of Chicago, Chicago 37, Ill. (P) The Enzymatic Synthesis of Uroporphyrin. (Illustrated 3¼ x 4)

1:45 *426.* JAGENDORF, ANDRÉ T., McCollum-Pratt Institute and Biology Department, Johns Hopkins University, Baltimore 18, Md. (B) Chloroplast Purification by a Density Method. (Illustrated 3¼ x 4)

1:55 *427.* ARNON, DANIEL I., M. B. ALLEN and F. R. WHATLEY, University of California, Berkeley, Calif. (P) Photosynthesis by Isolated Chloroplasts. (Illustrated 3¼ x 4)

2:10 *428.* KRALL, ALBERT R., Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. (B) Further Studies on the Oxygen Requirement of Photosynthetic Carbon Dioxide Fixation in Barley. (Illustrated 3¼ x 4)

2:25 *429.* SPIKES, JOHN D., and NORMAN I. BISHOP, University of Utah, Salt Lake City 1, Utah. (P) Kinetics of the Apparent Anion Stimulation of the Photochemical Activity of Isolated Chloroplasts. (Illustrated 3¼ x 4)

2:40 *430.* HORWITZ, LEONARD, Institute of Radiobiology and Biophysics (Fels Fund), University of Chicago, Chicago 37, Ill. (P) New Observations on the Oxhydrogen Reaction of *Scenedesmus.* (Illustrated 3¼ x 4)

2:55 *431.* QUAYLE, J. R., R. C. FULLER, A. A. BENSON, and M. CALVIN, Radiation Laboratory, University of California, Berkeley 4, Calif. (P) The Carboxylation Reaction of Photosynthesis. (Illustrated 3¼ x 4, Blackboard)

3:10 *432.* NORDAL, A., and A. A. BENSON, Radiation Laboratory, University of California, Berkeley 4, Calif. (P) Accumulation of Free Heptuloses in *Sedum* and Avocado. (Illustrated, Blackboard)

3:20 *433.* EMERSON, ROBERT, RUTH V. CHALMERS, LOWELL WOODSTOCK and ANITA LASHER, University of Illinois, Urbana, Ill. (P) Transient Changes in Respiration and Photosynthesis at Different Stages of Development of Chlorella Cells. (Illustrated 3¼ x 4, Blackboard)

3:35 *434.* BROWN, A. H., and C. P. WHITTINGHAM, University of Minnesota, Minneapolis, Minn. (P) Specific Identification of the Carbon Dioxide "Burst" in *Chlorella* Using the Mass Spectrometer. (Illustrated 3¼ x 4, Blackboard)

3:50 *435.* WHITTINGHAM, C. P., and A. H. BROWN, University of Minnesota, Minneapolis, Minn. (P) Determination of Rates of Photosynthesis and Respiration During Alternate Light and Dark. (Illustrated 3¼ x 4; Blackboard)

4:05 *436.* ARNON, DANIEL I., PATRICIA ICHIOKA, and A. W. FRENKEL, University of California, Berkeley, Calif. (P) The Role of Vanadium in Photosynthesis. (Illustrated 3¼ x 4)

4:20 *437.* NOGGLE, G. R., Biochemistry Division, Southern Research Institute, 917 S. 20th St., Birmingham 5, Alabama. (P) The Effects of Some Uracil Analogues on Photosynthesis. (Illustrated 3¼ x 4)

5:00 **Annual Business Meeting,** American Society of Plant Physiologists. ***Walker Auditorium.***

WEDNESDAY MORNING, SEPTEMBER 8

Concurrent Sessions 2A and 2B

Session 2A. Joint Meeting with the Physiological Section of the Botanical Society of America. *Chorus Room, Music Building.* ARTHUR W. GALSTON, presiding.

8:30 *438.* HACSKAYLO, JOHN and HARRY R. CARNS, Delta Branch Experiment Station and the U. S. Cotton Field Station, Stoneville, Miss. Quantitative and Qualitative Methods of Identifying Indole Compounds. (Illustrated 2 x 2)

8:45 *439.* VLITOS, A. J., and WERNER MEUDT, Carbide and Carbon Chemical Co., and the Boyce Thompson Institute for Plant Research, Inc., Yonkers 3, N. Y. Methods for the Extraction of Free Indole Acids from Plant Tissues for Application in Quantitative Paper Chromatography. (Illustrated 3¼ x 4; 2 x 2; Blackboard)

9:00 *440.* SIEGEL, S. M., and A. W. GALSTON, California Institute of Technology, Pasadena, Calif. (P) Peroxide Genesis in Plant Tissues and its Relation to Auxin Destruction and Growth. (Illustrated 2 x 2)

9:15 *441.* GALSTON, A. W., and S. M. SIEGEL, California Institute of Technology, Pasadena, Calif. (P) Antioxygenic Action of Cobalt as Related to Auxin Sparing and Growth Stimulation. (Illustrated 2 x 2; Blackboard)

9:25 *442.* VLITOS, A. J., and WERNER MEUDT, Carbide and Carbon Chemical Co., and the Boyce Thompson Institute for Plant Research, Inc., Yonkers 3, N. Y. (P) Indole Compounds in Photoperiodically-Sensitive Plants. (Illustrated 3¼ x 4; 2 x 2; Blackboard)

9:40 *443.* STEWARD, F. C., and E. M. SHANTZ, Cornell University, Ithaca, N. Y. (P) Some Substances which Induce Growth in Tissue Cultures from Potato Tuber. (Illustrated 3¼ x 4)

9:55 *444.* SHANTZ, E. M., Cornell University, Ithaca, N. Y. (P) Growth-Promoting Activity for Carrot Tissue Cultures from Immature Fruits of Aesculus Species. (Illustrated 3¼ x 4)

10:10 *445.* BRIGGS, WINSLOW R., Harvard University, Cambridge 38, Mass. (B) A Comparison of Auxin Destruction in Tissue Extracts and Intact Tissues of the Fern *Osmunda cinnamomea* L.

10:25 *446.* HENDERSON, JAMES H. M., and JOHN P. RIER, JR., Carver Foundation, Tuskegee Institute, Tuskegee, Alabama. (B) The Phenomenon of Habituation in Sunflower Tissue Culture. (Illustrated 3¼ x 4)

10:40 *447.* WAYGOOD, E. R., J. MOSIE and LUCIA KAPICA, McGill University, Montreal, Quebec. (P) The Effect of Plant Growth Regulating Substances on the Production of Pectin Esterase by *Cladosporium herbarum* (Pers.) Link. (Illustrated 3¼ x 4)

10:55 *448.* WAYGOOD, E. R., McGill University, Montreal, Quebec. (P) An Hypothesis to Explain Certain Aspects of the Physiology of Plant Resistance to Specific Fungal Pathogens. (Illustrated 3¼ x 4)

11:10 *449.* ROHRBAUGH, LAWRENCE M., and ELROY L. RICE, University of Oklahoma, Norman, Okla. (B) Relation of Phosphorus Nutrition to Absorption and Translocation of 2, 4-D in Tomato Plants. (Illustrated 3¼ x 4)

11:25 *450.* KLEIN, W. H., R. B. WITHROW, and V. B. ELSTAD, Smithsonian Institution, Washington 25, D. C. (P) The Effect of Red Radiant Energy, Auxins and Other Factors on the Angle of Opening of the Excised Dark-Grown Hypocotyl Hook of Bean. (Illustrated 3¼ x 4)

Session 2B. Joint Meeting with the Physiological Section of the Botanical Society of America. *Walker Auditorium.* MARTIN GIBBS, presiding.

8:30 *451.* WEDDING, RANDOLPH T., and WALTON B. SINCLAIR, University of California, Citrus Experiment Station, Riverside, Calif. (B) A Quantitative Paper Chromatographic Study of the Amino Acid Composition of Proteins and Juice of the Orange. (Illustrated 2 x 2)

8:40 *452.* GROBBELAAR, N., Cornell University, Ithaca, N. Y. (P) Some New and Some Unidentified Nitrogen Compounds in Leguminous Plants. (Illustrated 3¼ x 4)

8:55 *453.* BREGOFF, HERTA M., and C. C. DELWICHE, University of California, Berkeley, Calif. (P) Glycine Choline Transformation in Higher Plants. (Illustrated 3¼ x 4)

9:10 *454.* WEBSTER, GEORGE C., and J. E. VARNER, California Institute of Technology, Pasadena, Calif. (P) The Enzymatic Synthesis of Asparagine. (Illustrated 2 x 2)

9:25 *455.* POLLARD, JOHN K., and F. C. STEWARD, Cornell University, Ithaca, N. Y. (P) Some Naturally Occurring Compounds of Glutamine. (Illustrated 3¼ x 4)

9:40 *456.* VARNER, J. E., and GEORGE C. WEBSTER, California Institute of Technology, Pasadena, Calif. (P) The Mechanism of the Enzymatic Synthesis of Glutamine. (Illustrated 2 x 2)

9:55 *457.* ANDERSON, IRVIN C., and HAROLD J. EVANS, N. C. State College, Raleigh, N. C. (P) The Effect of Manganese Level in Culture Solutions on the Glutamyl Transferase Activity of Bean Tissue Extracts. (Illustrated 2 x 2)

10:10 *458.* SIEGEL, S. M., Kerckhoff Laboratories of Biology, California Institute of Technology, Pasadena, Calif. (P) The Biochemistry of Lignin Formation. (Illustrated 3¼ x 4; Blackboard)

10:25 *459.* McNUTT, WALTER S., 668 So. Mentor Ave., Pasadena, Calif. (P) The Role of Adenine in the Biogenesis of Riboflavin by *Eremothecium ashbyii.* (Illustrated 2 x 2)

10:40 *460.* ROBERTS, EDITH A., and BERNARD E. PROCTOR, Massachusetts Institute of Technology, Cambridge, Mass. (P) The Relationship of the Microphysical and Microchemical Structure of the Starch Grain to that of the Plastid in which it is Formed. (Illustrated 2 x 2)

10:55 *461.* HAIDRI, ZAFAR, and R. H. BURRIS, University of Wisconsin, Madison 6, Wis. (P) Synthesis of Starch from Organic Acids. (Illustrated 3¼ x 4)

11:10 *462.* JOHNSTON, J. A., and D. W. RACUSEN, Kerckhoff Laboratories of Biology, California Institute of Technology, Pasadena, Calif. (P) Synthesis of Branched Chain Compounds from Acetate. (Illustrated 2 x 2)

WEDNESDAY AFTERNOON, SEPTEMBER 8

Concurrent Sessions 2A and 2B

Session 2A. Joint Meeting with the Physiological Section of the Botanical Society of America. *Chorus Room, Music Building.* GEORGE G. LATIES, presiding.

1:30 *463.* RIETSEMA, JACOB, Genetics Experiment Station, Smith College, Northampton, Mass. (P) The Composition of the Internal Atmosphere of Developing Fruits of *Datura stramonium.* (Illustrated 3¼ x 4)

1:45 *464.* DECKER, JOHN P., College of Forestry, Syracuse, N. Y. (P) Accelerated Respiration in an Illuminated Leaf. (Illustrated 2 x 2)

1:55 *465.* MYERS, JACK, University of Texas, Austin, Texas. (P) Kinetic Characteristics of Warburg Manometry. (Illustrated 3¼ x 4; Blackboard)

2:10 *466.* LATIES, GEORGE G., University of Michigan, Ann Arbor, Mich. (P) The Nature of the Respiratory Rise in Sliced Tuberous Root Tissue. (Illustrated 3¼ x 4)

2:25 *467.* SHARPENSTEEN, HELEN H., and E. E. CONN, University of California, Berkeley, Calif. (P) Preparation and Properties of Potato Mitochondria. (Illustrated 3¼ x 4)

2:35 *468.* EVANS, HAROLD J., North Carolina State College, Raleigh, N. C. (P) Pyridine Nucleotide-Cytochrome c Reductase from Extracts of Higher Plants. (Illustrated 2 x 2)

2:50 *469.* FRITZ, GEORGE, and HARRY BEEVERS, Purdue University, West Lafayette, Ind. (P) Lipoxidase and Its Relation to Total Oxygen Absorption of Corn Seedling Homogenates. (Illustrated 3¼ x 4; Blackboard)

3:05 *470.* HENDERSON, JAMES H. M., and LAVANIEL L. HENDERSON, Carver Foundation, Tuskegee Institute, Tuskegee, Alabama. The Ascorbic Acid Oxidase and Polyphenol Oxidase (Catecholase) of Green and Etiolated Sunflower and Pea Tissues. (Illustrated 3¼ x 4)

3:20 *471.* YOCUM, C. S., D. P. HACKETT, and K. V. THIMANN, Harvard University, Cambridge, Mass. (P) Terminal Oxidases and Growth in Plant Tissues. Part III. Terminal Oxidation in Potato Tuber Tissue. (Illustrated 3¼ x 4; Blackboard)

3:35 *472.* BEEVERS, HARRY, and DAVID WALKER, Purdue University, Lafayette, Ind. (P) Oxidative Abilities of Germinating Castor Beans and Derived Particulate Enzymes.

Read by title.

3:50 *473.* SIEGELMAN, H. W., and T. A. GEISSMAN, U. S. Department of Agriculture, Wenatchee, Wash. and University of California, Los Angeles, Calif. (B) The Relation of Flavonoid Structures to Oxidation by Polyphenoloxidase. (Illustrated 3¼ x 4)

Session 2B. Joint Meeting with the Physiological Section of the Botanical Society of America. ***Walker Auditorium.*** S. H. WITTWER, presiding.

1:30 *474.* THOMAE, FRED W., JR., and HILDA F. ROSENE, University of Texas, Austin 12, Texas. (P) Respiration and Starvation in Relation to Ageing in Root Tissue. (Illustrated 3¼ x 4)

1:45 *475.* LOOMIS, W. E., A. M. BRYAN, and W. STRUVE. Iowa State College, Ames, Iowa. (P) Suspended Life. (Illustrated 3¼ x 4; 2 x 2)

1:55 *476.* BEEVERS, HARRY, and MARTIN GIBBS, Purdue University, Lafayette, Ind. and Brookhaven National Laboratory, Upton, N. Y. (P) Effect of the Age of Plant Tissue on the Pathway of Glucose Oxidation. (Illustrated 3¼ x 4)

2:10 *477.* POLLOCK, BRUCE M., University of Delaware, Newark, Delaware. (P) Metabolic Systems in Relation to the Rest Period in Cherry Embryos. (Illustrated 3¼ x 4; Blackboard)

2:25 *478.* LASHEEN, A. M., H. T. BLACKHURST, and W. C. HALL, A. & M. College of Texas, College Station, Texas. (P) Dormancy Studies in Blackberry Seed. (Illustrated Opaque Projector)

2:40 *479.* LASHEEN, A. M., H. T. BLACKHURST, and W. C. HALL, A. & M. College of Texas, College Station, Texas. (P) Biochemical Changes Associated with Internal Dormancy and After-Ripening of Blackberry Seed. (Illustrated Opaque Projector)

2:55 *480.* TS'O, PAUL O. P., LUTHER EGGMAN, and JEROME VINOGRAD, California Institute of Technology, Pasadena, Calif. (P) Properties of an Isolated "Contractile Protein" from *Physarum polycephalum.* (Illustrated 2 x 2; Blackboard)

3:10 *481.* JENSEN, WILLIAM A., California Institute of Technology, Pasadena, Calif. (P) Carbohydrate, Protein and Respiratory Gradients in the Root Tip and Their Relation to Cell Development. (Illustrated 3¼ x 4)

3:25 *482.* McILRATH, WAYNE J., and LAWRENCE BOGORAD, University of Chicago, Chicago 37, Ill. (P) Germination of Lettuce Seed Implanted in Xanthium Petioles. (Illustrated 2 x 2)

3:40 *483.* EICHENBERGER, ELIE, Earhart Laboratory, California Institute of Technology, Pasadena, Calif. (P) Response of Desert Annuals to Ecological Factors.

3:55 *484.* ANDERSEN, ALICE M., Seed Branch, U. S. Department of Agriculture, Beltsville, Md. (B) Causes of Abnormal Seedlings Which Occur in Testing Small-Seeded Legumes. (Illustrated 2 x 2)

4:05 *485.* BARTON, LELA V., Boyce Thompson Institute for Plant Research, Inc., Yonkers, N. Y. (B) Storing and Packeting Seeds of Douglas Fir and Western Hemlock. (Illustrated 2 x 2; 3¼ x 4)

4:20 *486.* BURNS, ROBERT E., Agricultural Research Service, Field Crops Research Branch, Georgia Experiment Station, Experiment, Georgia. (B) Indices of Deterioration in Lupine Seed.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

BIOLOGICAL SCIENCES EXHIBIT HALL

Don't forget to visit the **Biological Sciences Exhibit Hall** in Broward Hall. Outstanding producers of biological texts and products will be present to show you their latest instruments, books and supplies and to answer your questions. Arrange your schedule so you may enjoy a leisurely hour or two in the Exhibit Hall.

7. AMERICAN SOCIETY OF PLANT TAXONOMISTS

The American Society of Plant Taxonomists was organized at St. Louis in 1935 to promote the interests of taxonomy and systematic botany of vascular and non-vascular plants and the scientific welfare of its members. *Taxonomic Index*, a guide to the botanical literature of the western hemisphere, is published by the Society. Total membership, 568.

President: NORMAN C. FASSETT, University of Wisconsin, Madison, Wis.
Chairman of the Council: DAVID D. KECK, New York Botanical Garden, New York, N. Y.
Secretary: REED C. ROLLINS, Harvard University, Cambridge, Mass.
Treasurer: RICHARD A. HOWARD, Arnold Arboretum of Harvard University, Jamaica Plain, Mass.
Representative on the Governing Board, A.I.B.S.: ALBERT C. SMITH, U. S. National Museum, Washington, D. C.
Local Committee Representative: LILIAN ARNOLD.

Room 324, Florida Union (shared with the Botanical Society of America) has been reserved for the use of the American Society of Plant Taxonomists during the convention, for council and committee meetings.

Program of Seventeenth Annual Meeting

All meetings held jointly with the Systematic Section, Botanical Society of America.

SATURDAY MORNING, SEPTEMBER 4

8:00 **One day trip** (140 miles). Route through Cross Creek, Citra, Ft. McCoy, Eureka, into the scrub and through the Ocala National Forest with lunch at the Juniper Springs Recreation Area. Return trip will be by another highway with a stop-over at Silver Springs. Trip will leave from Broward Hall.

This trip presents locations of many of the ecological habitats of Florida with the single great exception of the seacoast. There will be swamps, hammocks, prairies, lakes, and the large xerophytic area known as "The Scrub," where *Pinus clausa, Carya floridana. Persea humilis, Garberia fruticosa, Ceratiola ericoides. Selaginella arenicola* ssp. *acanthonota* and scrub oaks (3 spp.) can be seen.

Upon demand only, following the papers, a half-day trip to Camp O'Leno (a State Park, 50 miles from Gainesville) near High Springs. Hammock area with a river which disappears underground (River Sink). Trip by private cars.

SUNDAY, SEPTEMBER 5

9:00 **Morning trip** to Newnan's Lake Loop (12 miles). Return to campus for dinner. Private cars. Place of departure: Broward Hall.

1:30 **Afternoon trip.** Devil's Millhopper (limestone sinkhole) and San Felasco Hammock (15 miles). Return to campus. Private cars. Leave from Broward Hall.

MONDAY MORNING, SEPTEMBER 6

Contributed papers. *Room 328, Engineering Building.* ERNEST S. FORD, Presiding.

9:00 *487.* REIMER, CHARLES W., Academy of Natural Sciences of Philadelphia, Philadelphia, Pa. Re-evaluation of the Diatom Species *Nitzschia frustulum.* (Illustrated 3½ x 4)

9:15 *488.* ROGERS, DAVID J., Allegheny College, Meadville, Pa. Preliminary Considerations on the Intraspecific Variation of *Manihot utilissima* Pohl. (Illustrated 2 x 2)

9:30 *489.* SMITH, DALE M., Indiana University, Bloomington, Ind. Natural Hybridization between *Helianthus divaricatus* L. and *H. microcephalus* T. and G. (Illustrated 2 x 2)

9:45 *490.* EIGSTI, O. J., Normal, Ill. *Polygonatum*, Species and Chromosomes. (Illustrated 2 x 2)

10:00 *491.* KELLEY, WILLIAM, and WADE BATSON. University of South Carolina, Columbia, S. C. Conspicuous Vegetational Zonation in a Carolina "Bay." (Illustrated 2 x 2)

10:10 *492.* BENSON, LYMAN, Pomona College, Claremont, Calif. Distributional Studies of the Species of *Ranunculus* Occurring in Arctic and Alpine Regions. (Illustrated 2 x 2)

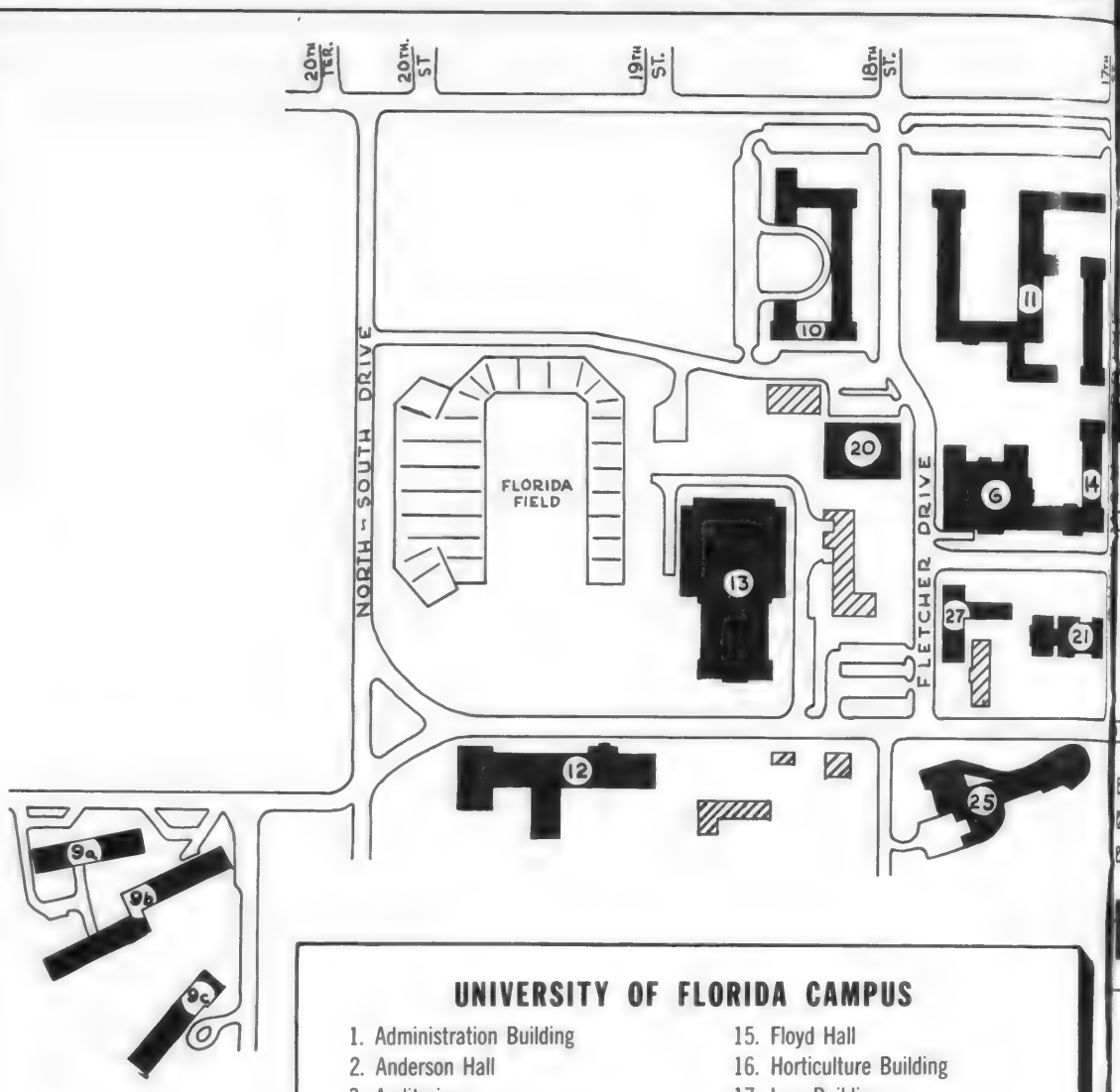
10:30 *493.* HOWARD, RICHARD A., Arnold Arboretum of Harvard University, Jamaica Plain, Mass. The New Harvard University Herbarium Building. (Illustrated 2 x 2)

10:45 *494.* BROWN, WALTER V., and ERNEST FRETER, University of Texas, Austin, Tex. A Cytotaxonomic Study of *Bouteloua curtipendula* and *B. uniflora.*

11:00 *495.* WALKER, EGBERT H., Smithsonian Institution, Washington, D. C. The Development of Japanese and American Botanical Co-operation. (Illustrated 2 x 2)

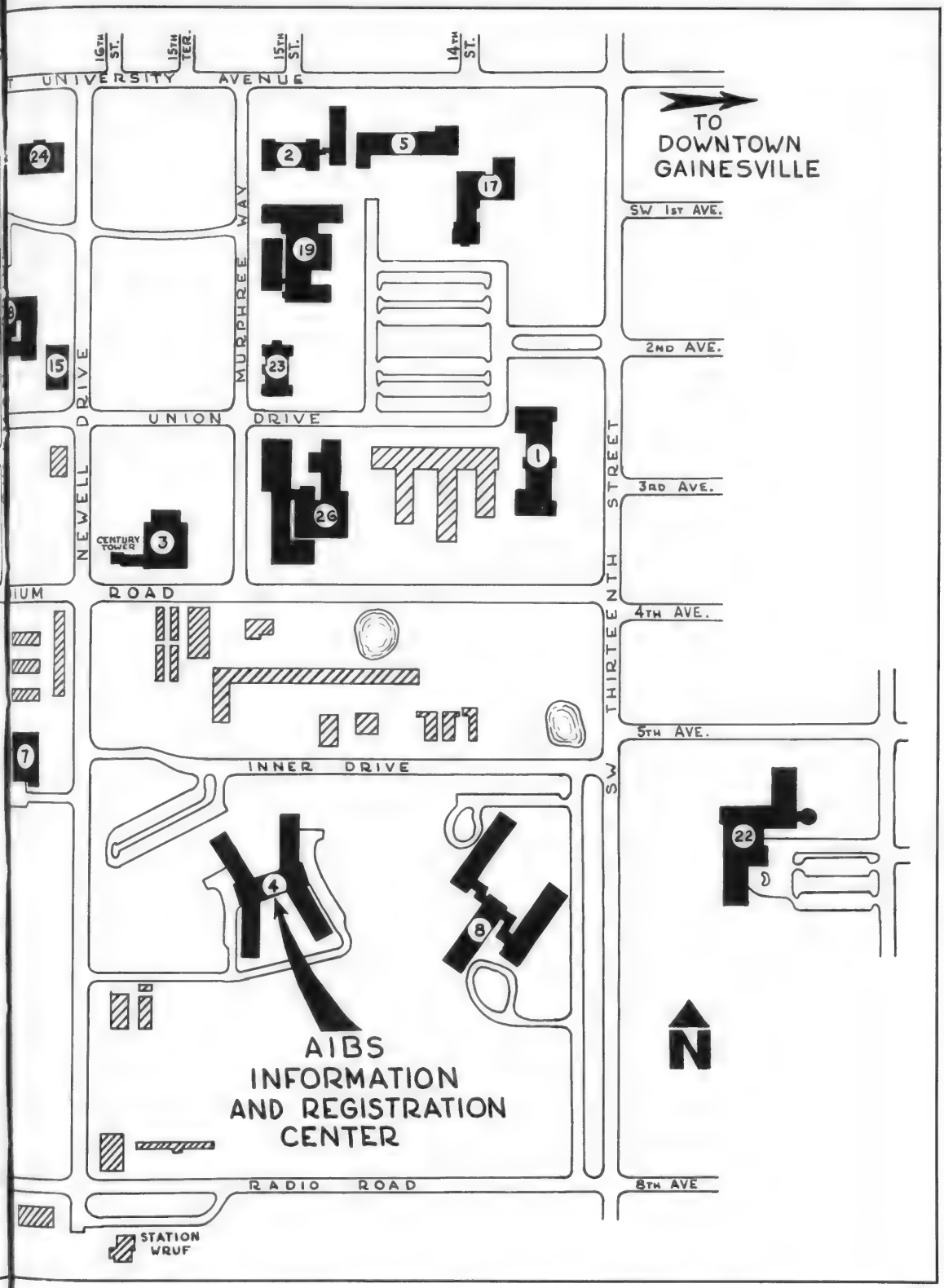
11:15 *496.* HUTTLESTON, DONALD G., Brooklyn Botanic Garden, Brooklyn, N. Y. The *Arisaema triphyllum* Complex. (Illustrated 2 x 2)

11:30 *497.* IMSHAUG, HENRY A., University of Idaho, Moscow, Idaho. The Lichen Genus *Buellia* in the West Indies.



UNIVERSITY OF FLORIDA CAMPUS

1. Administration Building
2. Anderson Hall
3. Auditorium
4. Broward Hall
5. Business Administration Building
6. Cafeteria
7. Dairy Products Laboratory
8. Dormitories
   - Women's Dormitories, 4, 8
   - Men's Dormitories, 9a, 9b, 9c, 10, 11
12. Engineering Building
13. Florida Gymnasium
14. Florida Union
15. Floyd Hall
16. Horticulture Building
17. Law Building
18. Leigh Hall
19. Library
20. Music Building
21. Newell Hall
22. P. K. Yonge Laboratory School
23. Peabody Hall
24. Science Hall
25. Student Service Center
26. Walker Hall
27. Temporary Building J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4TH AVE.
5TH AVE.
8TH AVE
MURPHREE WAY
NEWELL DRIVE
UNION DRIVE
SW THIRTEENTH STREET
CENTURY TOWER
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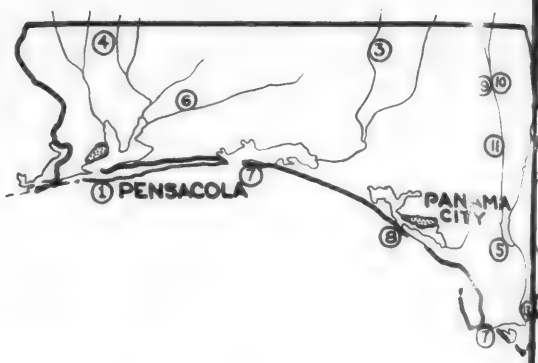
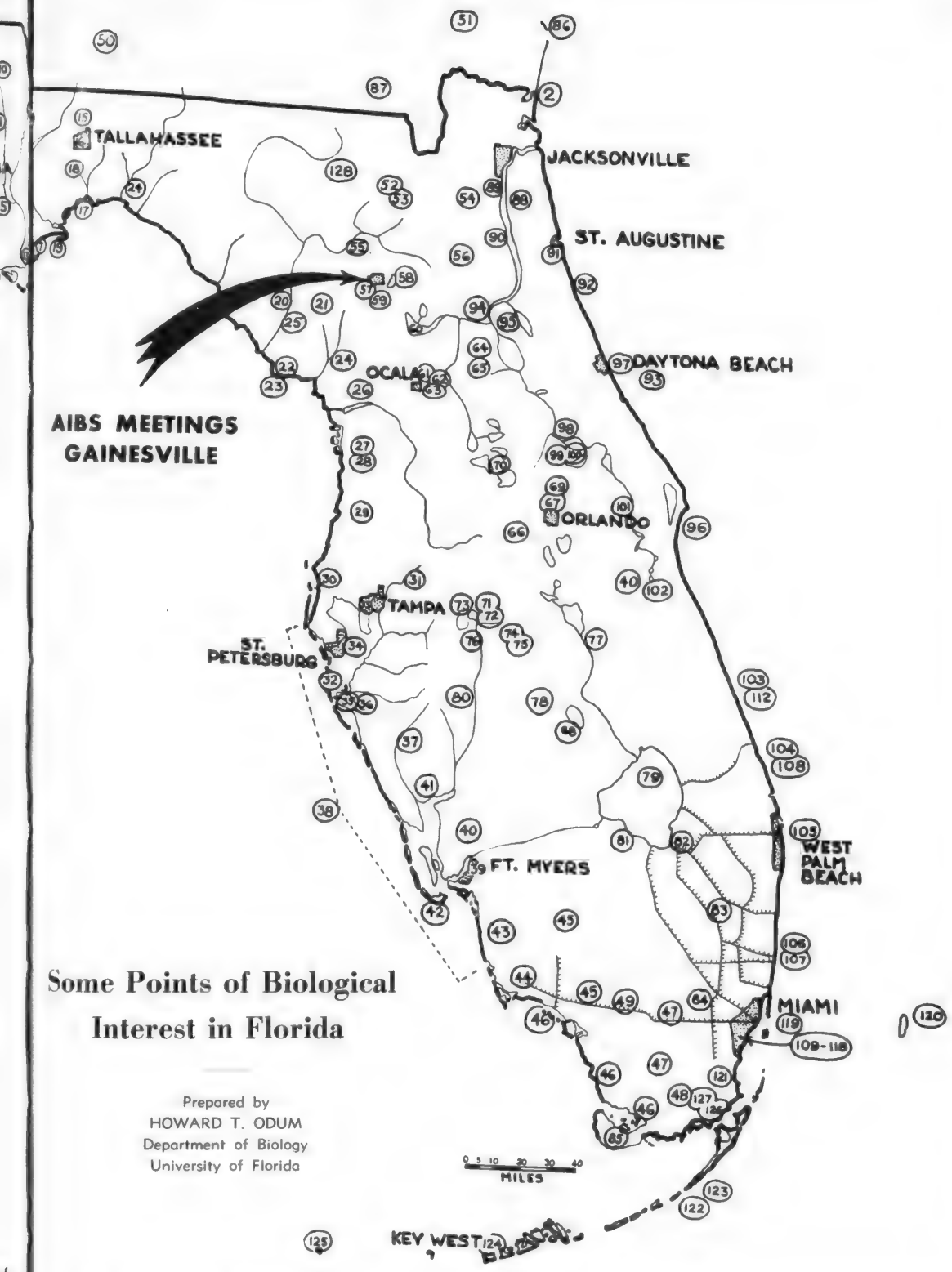
LEGEND

1. U. S. Fish and Wildlife Station (oysters) Pensacola.
2. Fort Clinch State Park—an old Fort.
3. Holmes Valley Deciduous Forest (climax).
4. West Florida Experiment Station (field crops)—Jay.
5. Fish Hatchery—Wewahitchka.
6. Fish Hatchery—Blackwater.
7. White Sand Beaches, Bluegreen water—West Florida Coastal Highway.
8. Coastal Dunes, St. Andrews, St. Park, Panama City.
9. Florida Caverns State Park, deciduous Forest (climax).
10. Communities in Large Clear Spring—Marianna Blue Springs.
11. Clear River, Algae-Mussel-Turtle Food Chain, Chipola River.
12. Relict plants, Endemic Species, Trap Door Spiders—Torreya State Park.
13. Oyster Station, Florida State Board of Conservation, Oyster bars, Apalachicola.
14. North Florida Experiment Station (Tobacco) Quincy.
15. Disappearing Lake Iamonia, Leon County.
16. Florida A & M University, Florida Geological Survey, Florida State University, Tallahassee, Fla.
17. Geese and Ducks in Winter—St. Marks Wildlife Refuge.
18. Underwater Communities, Limpkin Concentration, Glass Bottom Boats, Wakulla Springs.
19. Oceanographic Institute of Alligator Bay (Florida State University).
20. Darkwater River, Floating Plants, Diverse Fauna, Clear Springs, Suwanee River.
21. Sand Dunes of Pleistocene Shores (25′ elevation).
22. Estuarine Mud Flats, Mangroves; Oyster Bars, Cedar Keys.
23. Sea Horse Key Biological Station off Cedar Keys (Univ. of Florida) Requires Boat.
24. Moist Broadleaved Hardwoods Climax Forest, Mixed Hardwoods Forests, North Florida Hammock Forests—U. S. 19 Levy Co.—New U. S. 98 over Waccasassa River.
25. Large, clear spring and the quiet Suwanee River—Manatee Springs State Park.
26. Underwater Communities, Glass Bottom Boats—Rainbow Springs.
27. Marine Fish Concentrations in Freshwater Spring—Homosassa Springs.
28. Large Marsh Area—Chassahowitzka National Wildlife Refuge.
29. Underwater Communities Visible through Glass, Vertical Stratifications—Weekiwachee Springs.
30. Marine Sponge Industry—Tarpon Springs.
31. Stream Headwaters—Hillsborough River State Park.
32. Mullet Key Biological Substation (Pinellas County & Fla. State Univ.)—in Tampa Bay. Requires Boat.
33. University of Tampa, Tampa.
34. Large Shallow Fertile Estuary—Tampa Bay.
35. Gulf Coast Experiment Station (Vegetables, flowers)—Bradenton.
36. Live Manatee—Bradenton Public Museum.
37. Series of Lakes, Lush Vegetation—Myakka State Park.
38. Focus of the Red Tide—Clearwater to Naples.
39. Red Tide Station (U. S. Fish and Wildlife)—Ft. Myers.
40. Natural Dome-shaped Groups of Cypress Trees—Cypress Dome Country.
41. Hot, Saline, Anaerobic Spring with Tarpon, Crabs, Sulfur Bacteria and a Diurnal Shift in Transparency—Warm Salt Springs.
42. Shell Collectors Center—Sanibel Island.
43. Exhibit of Larger Florida Vertebrate Animals and Shell Processing Factory, Bonito Springs.
44. Natural Royal Palms—Royal Palm State Park.
45. Extensive Cypress Swamps, Sabal Palms, Bromeliads—"Big Cypress Area."
46. Seemingly Endless Mangrove Swamp Islands, Bays and Channels—Brackish Everglades and Ten Thousand Islands.
47. Vast "River of Grass"—Everglades (Marshes and Tree Islands).
48. Islands of Forest Vegetation in the Everglades—Subtropical and Tropical Hammocks.
49. Tamiami Canal, Darkwater Flood Canal, Dense Gar Populations, Dense Aquatic Plant Communities.
50. Longleaf Pine Plantations, Game Management Center—Stoddard at Thomasville, Ga.
51. Floodplain River Swamps—Large Rivers of Georgia Coastal Plain.
52. Federal Naval Stores Station—Olustee.
53. Florida Forest Service Tree Nursery, Osceola National Forest—Olustee.
54. Pine and Saw Palmetto Flatwoods.
55. O'Leno State Park.
56. Ravine and Lakes—Goldhead Branch State Park.
57. University of Florida, Florida Agricultural and Engineering Experiment Stations, Florida State Museum, Gainesville, Fla.
58. Large Scale Shad Seining—Newnans Lake.
59. Bird, Amphibian, and Snake Populations—Paynes Prairie.
60. Floating Islands, Brown Water, High Fertility—Orange Lake.
61. Eocene Fossiliferous Quarries, Nummulitic, Rt. 441. Just North of Ocala.
62. Underwater Communities, Glass Bottom Boats—Silver Springs.
63. Center of Reptile Collection, Distribution, Display and Research—Ross Allen Reptile Institute.
64. Inland Concentration of Marine Fishes and Blue Crabs—Salt Springs.
65. Sand Pine Scrub Communities, with Endemic Fauna and Flora.
66. District of Lakes and Orange Groves—Rt. 27, 441, 301.
67. Entomological and Plant Quarantine Station, USDA Subtropical Fruit Station, Orlando.
68. Archbold Biological Station (American Museum) Freshwater, Lake Placid.
69. Shell Museum, Rollins College, Winter Park.
70. Larger Central Florida Lakes.
71. Citrus Experiment Station, Lake Alfred.



72. Fish Hatchery—Winterhaven.
73. Florida Southern University—Lakeland.
74. Bird Aviary—Bok Singing Tower and Garden.
75. Cypress Gardens, Water sports.
76. Secondary Plant Successions on Pitted Land—Fossiliferous—Bone Valley Phosphate Pits.
77. Unique Bird Concentrations, Audubon Tours, Kissimmee Prairie and Drainage Basin.
78. Highlands Hammock State Park, Mixed Hardwoods and Palm Forest.
79. Largest Lake, Insect Swarms, Tarpon, Hurricane Levees, Lake Okeechobee.
80. Range Cattle Experiment Station—ONA.
81. Sugarcane Center—Clewiston.
82. Everglades Experiment Station (Vegetables)—Belle Glade.
83. Deep Peat and Muck, Sawgrass Marsh Everglades.
84. New Flood Dyke Basin, Levees.
85. Tropical Primitive Area, Endemic Species, Mosquitoes Dense—Cape Sable.
86. Sapelo Island Marine Biological Station (Univ. of Georgia—Accessible by Boat).
87. Large Swamp Area—Okeeflinokee Swamp.
88. Broad, Sluggish, Darkwater River and Chain of Lakes, Manatees, Marine Fishes—St. Johns River.
89. Primate Laboratory—Yerkes Laboratory, Orange Park.
90. Sulfur Bacteria—Green Cove Springs.
91. Alligator and Ostrich Farm, St. Augustine Beach.
92. Marineland, Marine Studios Oceanarium, Research Laboratory, and Fertilization Experiment.
93. Quartz Sand Beaches and Surf, Coquina Offshore Bar Islands—Florida East Coast.
94. Azalea Ravine Gardens—Palatka.
95. Welaka Conservation Reserve and Fish Hatchery (State, Federal and Univ. of Florida).
96. Mosquito Research Lab. (Florida State Board of Health) Cocoa.
97. North Florida Research Station (Battelle Institute) Marine Fouling, Daytona Beach.
98. Stetson University, De Land, Florida.
99. Small Zoo, Sanford.
100. Central Florida Experiment Station (Vegetables)—Sanford.
101. Extensive Freshwater Marshes and Prairies—St. Johns River.
102. Headwater Lakes of St. Johns River.
103. Narrows of the Brackish Indian River—Vero Beach.
104. Shark Factory—Salerno.
105. U. S. Sugar Plant Field Station—Canal Point, Palm Beach.
106. Lion Farm—Ft. Lauderdale.
107. Hibiscus Gardens, Ft. Lauderdale.
108. Parke Marine Museum, Jupiter.
109. Monkey Jungle.
110. Exotic Birds—Rare Bird Farm.
111. Exotic Birds—Parrot Jungle.
112. Variety of Tropical Plants—McKee Jungle Gardens.
113. Fairchild Tropical Gardens, Coconut Grove.
114. Natural Flora with West Indian Affinities—Brickell and Matheson Hammocks.
115. Exotic Animals—Crandell Zoo, Miami.
116. Tropical Fish Aquaria—Coral Gables.
117. University of Miami, Coral Gables.
118. U.S.D.A. Plant Introduction Garden, Coconut Grove.
119. Miami Marine Laboratory, Virginia Key.
120. Lerner Biological Station—Bimini (3 hours by boat).
121. Sub-Tropical Agricultural Experiment Station—Homestead.
122. Coral Reefs and Tropical Vegetation—Florida Keys Highway.
123. Porpoises and sharks—Theatre of the Sea.
124. Aquarium, Shrimping Center—Key West.
125. Dry Tortugas Keys, Bird Rookery, Former Carnegie Biological Station.
126. Upper Florida Keys of Key Largo coral limestone, Lower Florida Keys of oolitic limestone.
127. Everglades National Park Headquarters.
128. Stephen Foster Memorial Park and Museum—Good display of his life and music, White Springs.



Some Points of Biological Interest in Florida

Prepared by
HOWARD T. ODUM
Department of Biology
University of Florida

11:42 **Business Meeting,** Systematic Section of the Botanical Society of America.

MONDAY AFTERNOON, SEPTEMBER 6

1:30 **Symposium. Origin of the Flora of the Southeastern Coastal Plain.** ***Room 328, Engineering Building.*** WILBUR H. DUNCAN, presiding.

a. HORACE G. RICHARDS, Academy of Natural Sciences and University of Pennsylvania, Philadelphia, Pa. Geological History of the Southeastern Coastal Plain.

b. ROBERT E. McLAUGHLIN, University of Tennessee, Knoxville, Tenn. Contributions of Cretaceous and Tertiary Floras to the Southeastern Coastal Plain Flora.

c. JONATHAN J. WESTFALL, University of Georgia, Athens, Ga. Contributions of Quaternary Flora to the Southeastern Coastal Plain Flora.

d. EARL L. CORE, West Virginia University, Morgantown, W. Va. Contributions of the Southeastern Highland Floras to the Southeastern Coastal Plain Flora.

e. RICHARD A. HOWARD, Arnold Arboretum of Harvard University, Jamaica Plain, Mass. Contributions of the Caribbean Flora to the Southeastern Coastal Plain Flora.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies,** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Contributed papers. ***Room 328, Engineering Building.*** CARROLL E. WOOD, JR., presiding.

9:00 *498.* REEDER, JOHN R., Osborn Botanical Laboratory, Yale University, New Haven, Conn. The Structure of the Grass Embryo as a Criterion of Relationships between Genera. (Illustrated 2 x 2)

9:15 *499.* McFADDEN, SAMUEL E., Florida Agricultural Experiment Station, Gainesville, Fla. Alkaloid Synthesis as a Criterion of Relationship among Genera of *Berberidaceae* and *Ranunculaceae.* (Illustrated 2 x 2)

9:30 *500.* McFADDEN, SAMUEL E., Florida Agricultural Experiment Station, Gainesville, Fla. Comparison of the Chromosomes of *Berberidaceae* and *Ranunculaceae.*

9:45 *501.* STERN, WILLIAM L., School of Forestry, Yale University, New Haven, Conn. Comparative Xylem Anatomy and Relationship in Laurales. (Illustrated 3¼ x 4)

10:00 *502.* SCHUBERT, BERNICE G., Section of Plant Introduction, USDA, Plant Industry Station, Beltsville, Md. Collecting Plants for Chemical Investigation.

10:15 *503.* LANGMAN, MRS. IDA K., Academy of Natural Sciences, Philadelphia, Pa. The Flora of Mexico as Described in the 16th Century Relaciones. (Illustrated 2 x 2)

10:30 *504.* WEBSTER, GRADY L., Harvard University, Cambridge, Mass. Evolution of Growth Form in *Phyllanthus.* (Illustrated 2 x 2 and 3¼ x 4)

10:45 *505.* LÖVE, ÁSKELL, University of Manitoba, Winnipeg, Canada. Vicariism and Polyploidy. (Illustrated 2 x 2)

11:00 *506.* HU, SHIU-YING, Arnold Arboretum of Harvard University, Jamaica Plain, Mass. *Paulownia.* (Illustrated 2 x 2)

11:15 *507.* TURNER, B. L., University of Texas, Austin, Tex. A Cytotaxonomic and Evolutionary Study of the Genus *Hymenopappus* (Compositae). (Illustrated 3¼ x 4)

11:30 *508.* ANTHONY, MARGERY, Chico State College, Chico, Calif. Prickly Pears and Chollas of the Big Bend Region of Texas. (Illustrated 2 x 2)

11:45 *509.* GOULD, FRANK W., Texas A. & M., College Station, Tex. Pollen Size as Correlated with Polyploidy and Speciation in *Andropogon.*

TUESDAY EVENING, SEPTEMBER 7

6:30 **Annual Dinner** of the American Society of Plant Taxonomists. ***Social Room, Florida Union.*** Tickets must be purchased at time of registration.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

FLORIDA CLOTHING

The temperature in Florida during September probably will be in the 90's: rain can be expected nearly every day. Cottons, sundresses and sheers are advisable for women and short-sleeved sport shirts for men. Bathing suits will be happy additions to luggage.

8. BIOMETRIC SOCIETY (ENAR)

The Biometric Society is an international Society devoted to the mathematical and statistical aspects of biology. It was organized at the Marine Biological Laboratory, Woods Hole. Mass., on September 6, 1947. The Society is concerned with the advancement of quantitative biological science through the development of quantitative theories and the application, development, and dissemination of effective mathematical and statistical techniques. Total membership, 1191.

President: W. G. COCHRAN, The Johns Hopkins University, Baltimore 5, Md.
Secretary-Treasurer: C. I. BLISS, Box 1106, New Haven 4, Conn.
ENAR, Regional President: S. LEE CRUMP, School of Medicine and Dentistry, University of Rochester, Rochester, N. Y.
ENAR, Secretary-Treasurer: A. M. DUTTON, Radiation Biology Dept., University of Rochester, Rochester, N. Y.
Local Committee Representative: W. T. HANSON.

MONDAY MORNING, SEPTEMBER 6

Contributed papers. ***Room 208, Administration Building.*** A. M. DUTTON, presiding.

9:00 *510.* BLISS, C. I., and A. R. G. OWEN, Connecticut Agricultural Experiment Station, New Haven, Conn. Estimating k for a Series of Negative Binomial Distributions.

9:30 *511.* HANSON, W. D., and A. E. WILLSON, University of Florida, Gainesville, Fla. and Minute Maid Corporation, Plymouth, Fla. An Adaptation of the Method of Paired Comparisons to Measure Taste Preference for a Specific Attribute.

10:00 **Annual Business Meeting** of the Biometric Society (ENAR).

MONDAY AFTERNOON, SEPTEMBER 6

2:00 **Joint Meeting with the American Society of Plant Physiologists and the Botanical Society of America.** ***Walker Auditorium.*** **Invitational Papers. Experimental and Design Topics.** H. J. DYER, presiding.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting of all Participating Societies,** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY AFTERNOON, SEPTEMBER 7

1:30 **Joint Meeting with the American Society for Horticultural Science.** ***Room 207, Leigh Hall.*** **Symposium. The Use of Variance Components in Horticultural Research.** GEORGE F. POTTER, presiding.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

9. BOTANICAL SOCIETY OF AMERICA

The Botanical Society of America was organized in 1894 for scientific and educational advancement in the field of botany, to serve as a clearing house for botanists of America in respect to all matters of general botanical interest, to provide an opportunity for the presentation of research studies, and to furnish avenues for publication. Total membership, 1889.

President: ADRIANCE S. FOSTER, University of California, Berkeley, Calif.
Vice-President: OSWALD TIPPO, University of Illinois, Urbana, Ill.
Secretary: HARRIET B. CREIGHTON, Wellesley College, Wellesley, Mass.
Treasurer: HARRY J. FULLER, University of Illinois, Urbana, Ill.
Representative to the Governing Board of the A.I.B.S.: RALPH E. CLELAND, Indiana University, Bloomington, Ind.
Local Committee Representative: MILDRED M. GRIFFITH.

Room 324, Florida Union, has been reserved for the use of the Botanical Society of America for council and committee meetings.

SUNDAY AFTERNOON, SEPTEMBER 5

2:00 **Meeting of the Council,** Botanical Society of America. ***Room 324, Florida Union.***

SUNDAY EVENING, SEPTEMBER 5

8:00 **Meeting of the Council,** Botanical Society of America. ***Room 324, Florida Union.***

MONDAY MORNING, SEPTEMBER 6

Concurrent Sessions 1 to 4.

Session 1. General Section. ***Room 512, Engineering Building,*** ERNEST BALL, presiding.

9:00 *512.* MEYER, CONRAD F., Cornell University, Ithaca, N. Y. Development and Differentiation in the Root of *Bacopa monnieri* L. (Illustrated 2 x 2)

9:20 *513.* BRUMFIELD, ROBERT T., and DONALD E. FOARD, Oak Ridge National Laboratories, Oak Ridge, Tenn., and Longwood College, Farmville, Va. Modifications of Cell Growth and Geotropism in Timothy Roots. (Illustrated 3¼ x 4)

9:40 *514.* TORREY, JOHN G., University of California, Berkeley, Calif. The Determination of Vascular Patterns in Root Tissue Differentiation. (Illustrated 3¼ x 4)

10:00 *515.* DERMEN, HAIG, U. S. Bureau of Plant Industry, Beltsville, Md. Endogenic Bud Development on Stems of Apple. (Illustrated 2 x 2 and 3¼ x 4)

10:15 *516.* DERMEN, HAIG, U. S. Bureau of Plant Industry, Beltsville, Md. Histogenetic Factors in Color and Fuzzless Sports of Peach. (Illustrated 2 x 2 and 3¼ x 4)

10:30 *517.* BOKE, NORMAN H., University of Oklahoma, Norman, Okla. Development of the Tubercle in the Mammillarias. (Illustrated 2 x 2)

10:45 *518.* FOSTER, ADRIANCE S., University of California, Berkeley, Calif. Ontogeny and Structure of Terminal Foliar Sclereids in *Boronia.* (Illustrated 3¼ x 4)

11:10 *519.* MORROW, IELENE B., and JAMES E. GUNCKEL, Princeton University, Princeton, N. J., and Rutgers University, New Brunswick, N. J. Floral Development of *Tradescantia paludosa.* (Illustrated 3¼ x 4)

11:30 *520.* GUNCKEL, JAMES E., Rutgers University, New Brunswick, N. J. Effects of Continuous Gamma Irradiation on the Floral Ontogeny of 1N, 2N and 3N Tomatoes. (Illustrated 3¼ x 4)

Session 2. Paleobotanical Section. ***Room 334, Engineering Building.*** CLAIR A. BROWN, presiding.

9:00 *521.* BAXTER, ROBERT W., and E. S. HARTMAN, University of Kansas, Lawrence, Kans. A Fossil Coniferophyte Wood from Garnett, Kansas. (Illustrated 3¼ x 4)

9:15 *522.* LEISMAN, GILBERT A., University of Minnesota, Minneapolis, Minn. A New Pteridosperm Male Fructification. (Illustrated 3¼ x 4)

9:35 *523.* BANKS, HARLAN P., Cornell University, Ithaca, N. Y. Additional Data on Devonian Plants. (Illustrated 2 x 2)

9:50 *524.* KOSANKE, ROBERT M., Illinois Geological Survey, Urbana, Ill. A Paleobotanical Glossary.

10:10 *525.* BROWN, CLAIR A., Louisiana State University, Baton Rouge, La. Report on Palynological Papers presented at the Eighth International Botanical Congress.

10:30 *526.* OUSDAL, ASBJORN P., Micro-Fossil Laboratory, Santa Barbara, Calif. Apparent Function as Observed in Fossil Membranes in Microscopic-Meteoritic Vegetation. (Illustrated 3¼ x 4)

8:30 **Session 3A. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Chorus Room, Music Bldg.*** FOLKE SKOOG, presiding.

8:30 **Session 3B. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** - ***Room 207, Leigh Hall.*** C. A. SWANSON, presiding.

9:00 **Session 4. Contributed papers. Joint Meeting of the Systematic Section and the American Society of Plant Taxonomists.** ***Room 328, Engineering Building.***

11:42 **Business meeting** of the Systematic Section of the Botanical Society.

MONDAY AFTERNOON, SEPTEMBER 6

1:00 **Business meeting** of the Botanical Society of America, ***Room 512, Engineering Building.***

Concurrent Sessions 1 to 5

Session 1. General Section. ***Room 512, Engineering Building.*** ERNEST BALL, presiding.

2:00 *527.* TRUSCOTT, FREDERICK H., and MARION A. JOHNSON, Rutgers University, New Brunswick, N. J. On the Anatomy of the Tropical Liana, *Paullinia fuscescens* H.B.K. (Illustrated 3¼ x 4)

2:20 *528.* PHILPOTT, JANE, Duke University, Durham, N. C. An Attempt to Trace the Extra Vascular Tissues of Dicot Leaves. (Illustrated 3¼ x 4)

2:35 *529.* HALL, BENEDICT A., State University Teachers College, Cortland, N. Y. The Floral Anatomy of Some Acer Species.

2:55 *530.* SCHNEIDER, HENRY, University of California, Riverside, Calif. The Anatomy of the Bark of *Citrus limon* (Linn.) and the Occurrence of Radially Arranged, Transient Meristems which Accommodate the Increase of Bark Circumference. (Illustrated 2 x 2)

3:10 *531.* JOHNSON, MARION A., Rutgers University, New Brunswick, N. J. Structure of the Shoot Apex in Some Tropical Woody Plants. (Illustrated 3¼ x 4)

3:30 *532.* GUNCKEL, JAMES E., and ARNOLD H. SPARROW, Rutgers University, New Brunswick, N. J., and Brookhaven National Laboratory, Upton, Long Island, N. Y. Histology of Tumor Formation in an Irradiated Tobacco Hybrid. (Illustrated 3¼ x 4)

3:50 *533.* KAEISER, MARGARET, Southern Illinois University, Carbondale, Ill. Microstructure of Tracheids of *Podocarpus* as Related to Position in Tree. (Illustrated 2 x 2)

4:05 *534.* CURRIER, HERBERT B., KATHERINE ESAU, and VERNON I. CHEADLE, University of California, Davis, Calif. Plasmolytic Studies of Phloem. (Illustrated 3¼ x 4)

4:20 *535.* PARKE, ROBERT V., and ERNEST M. GIFFORD, JR., University of California, Davis, Calif. The Relation Between Methods of Dehydration and Stainability of Apical Meristems with Tannic Acid-Iron Chloride. (Illustrated 3¼ x 4)

4:35 *536.* BRADLEY, MURIEL V., and JULIAN C. CRANE, University of California, Davis, Calif. Endopolyploidy and Cell Size Increased in Apricot Fruits by 2, 4, 5-trichlorophenoxyacetic acid. (Illustrated 2 x 2)

Session 2. Paleobotanical Section. *Room 334, Engineering Building.* CLAIR A. BROWN, presiding.

2:00 *537.* TRAVERSE, ALFRED, Charles R. Robertson Lignite Research Laboratory, U. S. Bureau of Mines, Grand Forks, N. D. Occurrences of the Oil-forming Alga, *Botryococcus*, in Lignites and Other Tertiary Sediments. (Illustrated 2 x 2, 3¼ x 4)

2:25 *538.* GUENNEL, G. K., Geological Survey, Indiana University, Bloomington, Ind. New Spore Species found in the Pottsville Coals of Indiana. (Illustrated 2 x 2)

2:45 *539.* BAXTER, ROBERT W., University of Kansas, Lawrence, Kans. A new *Palaeostachya* from the Pennsylvanian of Iowa. (Illustrated 3¼ x 4)

2:00 **Session 3. Joint Meeting of the Physiological Section with American Society of Plant Physiologists and the Biometric Society of America. *Walker Auditorium.***
Invitational papers. Experimental and Design Topics. H. J. DYER, presiding.

1:30 **Session 4. Joint Meeting of the Systematic Section and the American Society of Plant Taxonomists. *Room 328, Engineering Building.***
Symposium: Origin of the Flora of the Southeastern Coastal Plain. WILBUR H. DUNCAN, presiding.

2:00 **Session 5. Joint Meeting of the Teaching Section with the National Association of Biology Teachers and the Florida Association of Science Teachers. *Engineering Library.*** FRED H. NORRIS, presiding.
Symposium: General Biology Courses; Their Organization and Content.

a. T. G. YUNCKER, DePauw University, Greencastle, Ind. History and Objectives of General Biology Courses.

b. L. C. PETRY, Cornell University, Ithaca, N. Y. Botany Fundamental to General Biology Courses.

c. J. L. SOLINGER, Simmons College, Boston, Mass. Zoology Fundamental to General Biology Courses.

d. S. S. GREENFIELD, State University of New Jersey, Newark, N. J. Content and/or Principles Common to Botany and Zoology.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, *"The Passing of the Fleet."*

TUESDAY MORNING, SEPTEMBER 7

Concurrent Sessions 1 to 6

Session 1. General Section. *Room 512, Engineering Building.* ERNEST BALL, presiding.

9:00 *540.* BOLD, HAROLD C., Vanderbilt University, Nashville, Tenn. Observations on the Reproduction of *Ephedra antisyphilitica* Meyer. (Illustrated 3¼ x 4)

9.15 *541.* MUZIK, THOMAS, and HECTOR CRUZADO, Federal Experiment Station, Mayaguez, P. R. Propagation of *Hevea brasiliensis* by Adventitious Shoots. (Illustrated 2 x 2)

9:35 *542.* DERMEN, HAIG, U. S. Bureau of Plant Industry, Beltsville, Md. Isolation of Polyploid Branches from Colchicine-Treated Grapes. (Illustrated 2 x 2 and 3¼ x 4)

9:50 *543.* REEDER, JOHN R., Yale University, New Haven, Conn. The Homology of the Coleoptile in the Grass Embryo. (Illustrated 2 x 2)

10:05 *544.* SMITH, CORNELIA M., Baylor University, Waco, Texas. Development of the Megagametophyte and Embryo of *Yucca.* (Illustrated 3¼ x 4)

10:25 *545.* HURST, FANNIE M., Baylor University, Waco, Texas. Seedling Development of *Smilax bona-nox* L. and *Smilax hispida* Muhl. (Illustrated 3¼ x 4)

10:45 *546.* MEYER, CONRAD F., Cornell University, Ithaca, N. Y. Fertilization and Early Embryogeny in the McIntosh Apple. (Illustrated 2 x 2)

11:05 *547.* BECK, EDWIN G., University of Georgia, Athens, Georgia. The Effects of Inquilines upon the Development of Galls Caused by *Eurofta solidaginis.* (Illustrated 3¼ x 4)

11:25 **Business Meeting,** General Section, Botanical Society of America.

8:30 **Session 2. Microbiological Section. Joint Meeting with Mycological Society of America. *Room 108, Floyd Hall.*** VICTOR M. CUTTER, presiding.

9:35 **Business Meeting,** Microbiological Section, Botanical Society of America. ***Room 108, Floyd Hall.***

9:00 **Session 3. Paleobotanical Section. *Room 420, Engineering Building.*** CLAIR A. BROWN, presiding.
Business Meeting of Paleobotanical Section.

8:30 **Session 4A. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists. *Chorus Room, Music Building.*** T. C. BROYER, presiding.

8:30 **Session 4B. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists. *Walker Auditorium.*** JAMES BONNER, presiding.

9:00 **Session 5. Joint Meeting of the Systematic Section and the American Society of Plant Taxonomists.** ***Room 328, Engineering Building.***

Session 6. Joint Meeting of the Teaching Section with National Association of Biology Teachers and the Florida Association of Science Teachers. ***Engineering Library.*** FRED H. NORRIS, presiding.

9:30 *548.* STANFIELD, J. FISHER, Miami University, Oxford, Ohio. Some Current Thoughts on General Education.

10:00 *549.* BLAYDES, GLENN W., Ohio State University, Columbus, Ohio. Seed Variations in the Teaching of Botanical Courses.

10:30 **Business Meeting** of the Teaching Section of the Botanical Society of America.

TUESDAY AFTERNOON, SEPTEMBER 7

1:00 **Business Meeting** of the Botanical Society of America. ***Room 512, Engineering Building.***

Concurrent Sessions 1 and 2

Session 1. General Section. ***Room 512, Engineering Building.*** ERNEST BALL, presiding.

2:00 *550.* STEERE, WILLIAM C., and LEWIS E. ANDERSON, Stanford University, Stanford, Calif., and Duke University, Durham, N. C. Chromosomal Studies in the Orthotrichaceae, a Family of Mosses. (Illustrated 2 x 2)

2:20 *551.* BRYAN, VIRGINIA S., Duke University, Durham, N. C. Chromosome Studies in the Genus *Sphagnum.* (Illustrated 3¼ x 4)

2:35 *552.* MERTENS, THOMAS R., and ALLAN B. BURDICK, Purdue University, Lafayette, Ind. Manifold Effects of the Gene *Bi* in the Tomato. (Illustrated 3¼ x 4)

2:55 *553.* SNYDER, LEON A., ALICE R. HERNANDEZ, and HARRY E. WARMKE, Federal Experiment Station, Mayaguez, P. R. and University of Puerto Rico, Rio Piedras, P. R. Apomixis in *Pennisetum ciliare.* (Illustrated 2 x 2)

3:15 *554.* CHANDLER, CLYDE, Boyce Thompson Institute for Plant Research, Yonkers, N. Y. Induced Polyploidy in *Plantago.* (Illustrated)

3:35 *555.* EARL, GERTRUDE (Sponsored by W. S. FLORY), Blandy Experimental Farm, University of Virginia, Boyce, Va. A Cytological Study of Several Genera in the Araceae. (Illustrated 3¼ x 4)

3:50 *556.* LEWIS, WALTER H. (Sponsored by W. S. FLORY), Blandy Experimental Farm, Boyce, Va. A Cytotaxonomic Revision of the Genus *Rosa.* I. In Northwestern North America. (Illustrated 3¼ x 4)

4:10 *557.* BOWDEN, WRAY M., Dept. of Agriculture, Ottawa, Canada, Cytotaxonomic Studies in Section *Psammelymus* of the Genus *Elymus.* (Illustrated 2 x 2)

4:30 *558.* SPENCER, J. L., and ALBERT F. BLAKESLEE, University of Massachusetts, Amherst, Mass., and Smith College Genetics Experiment Station, Northampton, Mass. Induction of Pollen Lethals in *Datura stramonium* by Exposure to Different Radiations. (Illustrated 3¼ x 4)

4:45 *559.* CUMMINGS, JEAN M., H. T. YOST, L. C. GOLDSTEIN, and A. F. BLAKESLEE, Western Reserve University, Cleveland, Ohio, Amherst College, Amherst, Mass., and Smith College Genetics Experiment Station, Northampton, Mass. The Effects of Different Radiations on the Chromosomes of *Datura stramonium.* (Illustrated 3¼ x 4)

1:30 **Session 2A. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Chorus Room, Music Building.*** SOLON GORDON, presiding.

1:30 **Session 2B. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Walker Auditorium.*** EDWARD TOLBERT, presiding.

WEDNESDAY MORNING, SEPTEMBER 8

Concurrent Sessions 1, 2A, 2B

Session 1. General Section. ***Room 512, Engineering Building.*** ERNEST BALL, presiding.

9:00 *560.* DOERPINGHAUS, S. LEONARD, University of Texas, Austin, Texas. Studies of the Effect of RNA and Xanthine on Various Lines of Excised Tomato Roots. (Illustrated 3¼ x 4)

9:15 *561.* BALL, ERNEST, North Carolina State College, Raleigh, N. C. Experiments on the Embryo of *Ginkgo biloba.* (Illustrated 3¼ x 4)

9:35 *562.* MOZINGO, HUGO NELSON, Florida Southern College, Lakeland, Fla. Experimental Studies on the Shoot Apex of *Bryophyllum.* (Illustrated 2 x 2)

9:50 *563.* WETMORE, RALPH H., and JEAN P. NITSCH, Harvard University, Cambridge, Mass. An Interpretation of the Shoot Apical Meristem as Suggested by *In Vitro* Techniques. (Illustrated 3¼ x 4)

10:15 *564.* VAN FLEET, DICK S., University of Missouri, Columbia, Mo. Histochemical Studies of Meristems. (Illustrated 2 x 2)

10:35 *565.* STEEVES, TAYLOR A., and I. M. SUSSEX, Harvard University, Cambridge, Mass., and Victoria University College, Wellington, New Zealand. *In Vitro* Studies on Abnormal Growth of the Prothallus of the Bracken Fern. (Illustrated 3¼ x 4)

10:55 *566.* PARTANEN, CARL R., Harvard University, Cambridge, Mass. Nuclear Behavior in Relation to Abnormal Growth in Fern Prothalli. (Illustrated 3¼ x 4)

11:15 *567.* STRAUS, JACOB, Harvard University, Cambridge, Mass. The Cytology of Maize Endospern Tissue Cultures. (Illustrated 3¼ x 4)

11:30 *568.* LA RUE, CARL D., and S. NARAYANASWAMI, University of Michigan, Ann Arbor, Mich. The Morphogenetic Effects of Various Factors on the Development of Gemmae of *Lunularia.* (Illustrated 3¼ x 4)

8:30 **Session 2A. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Chorus Room, Music Building.*** A. W. GALSTON, presiding.

8:30 **Session 2B. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Walker Auditorium.*** MARTIN GIBBS, presiding.

WEDNESDAY AFTERNOON, SEPTEMBER 8

2:00 **Session 1. Microbiological Section. Joint Meeting with Mycological Society of America.** ***Room 108, Floyd Hall.*** DONALD P. ROGERS, presiding.

1:30 **Session 2A. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Chorus Room, Music Building.*** GEORGE G. LATIES, presiding.

1:30 **Session 2B. Joint Meeting of the Physiological Section and the American Society of Plant Physiologists.** ***Walker Auditorium.*** S. H. WITTWER, presiding.

WEDNESDAY EVENING, SEPTEMBER 8

6:30 **Annual Dinner,** Botanical Society of America. ***Student Service Center.***

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

10. ECOLOGICAL SOCIETY OF AMERICA

The Ecological Society of America was organized on December 28, 1915, at Columbus, Ohio, to promote the scientific study of organisms in relation to their environment, both as individuals and as members of populations and communities, and to facilitate the exchange of ideas among those interested in ecology. Total membership, 1,158.

President: JOHN E. POTZGER, Department of Botany, Butler University, Indianapolis, Ind.
Vice-President: SAMUEL EDDY, Department of Zoology, University of Minnesota, Minneapolis, Minn.
Secretary: JOHN F. REED, Department of Botany, University of Wyoming, Laramie, Wyoming.
Treasurer: FREDERICK H. TEST, Department of Zoology, University of Michigan, Ann Arbor, Mich.
Representative to Governing Board, A.I.B.S.: W. A. DAYTON, Forest Service, USDA, Washington, D.C.
Local Committee Representative: JOHN H. DAVIS.

West Lounge, Fourth Floor, Broward Hall has been reserved for the use of the Ecological Society of America for committee and other small group meetings.

FIELD TRIP PRIOR TO MEETINGS, SEPTEMBER 1-5

A four-day field trip, by bus, will leave Gainesville Thursday morning, September 2. The group will travel to the University of Miami and from there make one trip each day (three trips to choose from), and return to Gainesville Sunday, September 5. The leader is John H. Davis, Department of Botany, University of Florida. All available places were filled by June 1, but as some cancellations will probably occur late applicants may find space. Apply to leader. For details, see General Information, #8, Field Trips.

WEDNESDAY EVENING, SEPTEMBER 1

8:30-9:30 **Briefing session** for the field trip in the Recreation Room, Broward Hall. This will provide information about the natural features, communities and biota of the four-day trip, and give instructions, itinerary, and other details. All persons going on the trip should plan to attend. A second session will be conducted Friday evening at the University of Miami, after some of the individual trips in that region have been taken.

MONDAY MORNING, SEPTEMBER 6

Concurrent Sessions A, B and C

9:00 **Session A. Joint Session with the American Society of Limnology and Oceanography.** ***Room 18, Business Administration Building,*** F. G. WALTON SMITH, presiding.

Session B. Contributed Papers. Studies on Ecological Life Histories and Microenvironments of Plants. ***Room 120, Law School.*** JOHN T. CURTIS, presiding.

9:00 *569.* LAING, CHARLES C., University of Chicago. Ecological Life History of the Marram Grass Population on Southern Lake Michigan Dunes. (Illustrated 2 x 2)

9:20 *570.* HULBERT, LLOYD C., University of Minnesota, Minneapolis, Minn. Environmental Requirements for Germination of *Bromus tectorum* and Other Annual Bromegrasses. (Illustrated 3¼ x 4)

9:40 *571.* GATES, FRANK C., Kansas State College, Manhattan, Kansas. Some Experiments on the Decay of Fresh Leaves Buried in *Sphagnum in Situ* in a Bog.

10:00 *572.* BORMAN, F. H., Emory University, Atlanta, Georgia. Ecological Implications of Size and Weight Changes in *Pinus taeda* L. Seedlings During the First Growing Season. (Illustrated 3¼ x 4)

10:15 *573.* FARNSWORTH, C. E., College of Forestry, Syracuse, New York. Observations of Terminal Elongation of Certain Tree Species in Western Adirondacks.

10:30 *574.* FRITTS, HAROLD C., and EDWIN C. FRITTS, Ohio State University, Columbus, Ohio. A New Dendrograph for Recording Changes in the Outer Radius of a Tree. (Illustrated 2 x 2)

10:50 *575.* OLSON, JERRY S., The Connecticut Agricultural Experiment Station, New Haven, Conn. Germination and Survival of Eastern Hemlock Seedlings in Connecticut Seedbeds.

11:10 *576.* PLATT, ROBERT B., Emory University, Atlanta, Georgia. Vertical and Horizontal Environmental Gradients Occurring within a Woodland and Adjacent Old Field in the Coastal Plain. (Illustrated 2 x 2 and 3¼ x 4)

11:25 *577.* DAUBENMIRE, REXFORD F., State College of Washington, Pullman, Wash. Xylem Increments in Relation to Weather and to Altitude in the Northern Rockies. (Illustrated 2 x 2)

11:45 *578.* STEARNS, FOREST, and GEORGE GRIES, Purdue University, Lafayette, Ind. Autecological Studies on Wheat under Controlled Weather Conditions. (Illustrated 2 x 2)

Session C. Contributed Papers, Animal Ecology. *Room 104, Law School*, SAMUEL EDDY, presiding.

9:00 *579.* MOORE, WALTER G., Loyola University, New Orleans, La. The Fairy Shrimp, *Eubranchipus holmani*, in Louisiana. (Illustrated 3¼ x 4)

9:15 *580.* HAEGER, JAMES S., Florida State Board of Health, Vero Beach, Fla. Observations of Salt-Marsh Mosquitoes Feeding on Sweets in Nature at Sanibel Island, Florida.

9:30 *581.* SOMMERMAN, KATHRYN M., 5419 Old Cheney Hway., Orlando, Florida. The Possibility of Determining the Limits of Upland, Semi-upland and Lowland Stream Black Fly Habitat Types from Topographic Maps. (Illustrated 2 x 2)

9:45 *582.* TANNER, JAMES T., University of Tennessee, Knoxville, Tennessee. Population Dynamics of Juncos *(Junco hyemalis)* in the Great Smoky Mountains. (Illustrated 3¼ x 4)

10:00 *583.* GOODNIGHT, C. J., Purdue University, Lafayette, Indiana, and A. E. H. GAUMER, Moravian College, Bethlehem, Pennsylvania. An Investigation of the Blood of Turtles Correlated with Their Activity. (Illustrated 3¼ x 4)

10:15 *584.* DENYES, H. ARLISS, Florida State University, Tallahassee, Florida. Physiological Changes in the Hamster during Weeks of Acclimatization to Cold Temperature. (Illustrated 2 x 2)

10:30 *585.* MARTIN, PAUL S., University of Michigan, Ann Arbor, Michigan. Ecological Distribution of Vertebrates in a Mexican Cloud Forest. (Illustrated 3¼ x 4)

10:45 *586.* EVANS, FRANCIS C., and PHILIP J. CLARK, Institute of Human Biology, University of Michigan, Ann Arbor, Michigan. Distance to Nearest Neighbor in the Measurement of Interspecific Association. (Illustrated 2 x 2)

11:00 *587.* MEAD, FRANK W., State Plant Board, Gainesville, Florida. Some Mosquito Habitats. (Illustrated 2 x 2)

11:15 *588.* BRADDOCK, JAMES C., Michigan State College, East Lansing, Mich. Aggressive Behavior Among Females of the Siamese Fighting Fish, *Betta splendens*.

11:30 *589.* TEST, FREDERICK H., University of Michigan, Ann Arbor, Mich. Territoriality in Amphibians. (Illustrated 2 x 2)

MONDAY AFTERNOON, SEPTEMBER 6

Session A. Invited Papers on the Ecology of Florida. *Room 120, Law School.* MURRAY BUELL, presiding.

2:00 *590.* EDWARDS, R. A., University of Florida, Gainesville, Florida. Geological Conditions Affecting Florida Ecology. (Illustrated 2 x 2)

2:30 *591.* KURZ, H., Florida State University, Tallahassee, Florida. Coastal Marsh Communities. (Illustrated 2 x 2 and 3¼ x 4)

3:00 *592.* JENNINGS, W. S., Florida Game and Freshwater Fish Commission, Tallahassee, Florida. Aquatic Communities of Some Inland Water Habitats. (Illustrated 2 x 2)

3:30 *593.* LAESSLE, A. M., University of Florida, Gainesville, Florida. Upland Plant Community Succession in North-Central Florida. (Illustrated 2 x 2)

4:00 *594.* DAVIS, JOHN H., University of Florida, Gainesville, Florida. Tropical and Subtropical Communities of Southern Florida. (Illustrated 2 x 2 and 3¼ x 4)

4:30 *595.* WILLIAMS, ROBERT H., University of Miami, Coral Gables, Florida. Tropical Marine Algae of Florida. (Illustrated 16 mm. colored movie.)

MONDAY EVENING, SEPTEMBER 6

6:30 **Annual Dinner** of the Ecological Society of America, ***Social Room, Florida Union Building.*** JOHN E. POTZGER, presiding. Address: LEE R. DICE, Past President, "What Is Ecology."

9:00 **General Meeting for all Participating Societies, *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Concurrent Sessions A and B

Session A. Contributed Papers. Studies on Vegetation and Community Structure. *Room 104, Law School.* LINCOLN ELLISON, presiding.

9:00 *596.* KUCERA, C. L., and R. E. McDERMOTT, University of Missouri, Columbia, Missouri. Sugar Maple-Basswood Studies in the Forest-Prairie Transition in Central Missouri. (Illustrated 2 x 2)

9:15 *597.* RUSSELL, NORMAN H., Grinnell College, Grinnell. Iowa. Forest Vegetation of the E. N. Hyck Preserve, New York. (Illustrated 2 x 2)

9:30 *598.* KRAJINA, VLADIMIR J., University of British Columbia, Vancouver, British Columbia. Classification of Hemlock Forest Region in the Columbia River Basin. British Columbia. (Illustrated 2 x 2)

9:45 *599.* POTZGER, J. E., Butler University, Indianapolis, Indiana. Comparison of Forest Chronology from a Layer of Peat Exposed by Wave Action with a Deep Inland Bog. (Illustrated 2 x 2)

10:00 *600.* BOYCE, STEPHEN G., Ohio University, Athens, Ohio. Deer Browse of a Blue Ridge Mountain Area Thirteen Years After a Major Fire. (Illustrated 3¼ x 4)

10:15 *601.* THARP, B. C., University of Texas, Austin, Texas. Climate and Soils in the Pine Forest of East Texas. (Illustrated 2 x 2)

10:30 *602.* SHARP, A. J., University of Tennessee, Knoxville. Tenn. Epiphytism in the Great Smoky Mountains. (Illustrated 2 x 2)

10:45 *603.* HALE, MASON E., University of Wichita, Wichita. Kansas. An Application of Interspecific Association to Corticolous Cryptogamic Communities.

10:55 *604.* LINDSEY, ALTON A., Purdue University, Lafayette. Indiana. Plant Community Analysis in the Sonoran Desert by Ectachrome Airphotos and Ground Sampling. (Illustrated 3¼ x 4)

11:10 *605.* LEMON, PAUL C., State University College for Teachers, Albany, New York. Ecology of a Shell Island, Sanibel-Lee County, Florida. (Illustrated 2 x 2)

11:30 *606.* WARE, GEORGE H., University of Wisconsin, Madison, Wis. The Lowland Hardwood Forest of Southern Wisconsin. (Illustrated 2 x 2)

11:40 **Organization Meeting, Committee for the Study of Vegetation.** JOHN T. CURTIS, presiding.

Session B. Invited Papers. Social Organization in Animals. Part I. *Science Reading Room, Main Library.* A Program Arranged by J. P. SCOTT in Honor of W. C. ALLEE, who will preside.

9:00 *607.* GREENBERG, BERNARD, Roosevelt College, Chicago, Illinois. Social Organization in a Substrate Spawning Cichlid, *Aequidens portalegrenis.* (Illustrated 16 mm. film)

9:30 *608.* BANKS, EDWIN M., University of Florida, Gainesville, Florida. Social Organization in the Red Jungle Fowl, *Gallus g. bankiva* Temm. (Illustrated 16 mm. film)

9:55 *609.* GUHL, A. M., Kansas State College, Manhattan, Kansas. Some Observations Pertinent to Certain Concepts in Social Behavior. (Illustrated 16 mm. film)

10:20 *610.* FOREMAN, DAHRL, and W. C. ALLEE, University of Chicago, Chicago, Illinois and University of Florida, Gainesville, Florida. A Correlation Between Posture Stances and Outcome in Paired Contests of Domestic Hens. (Illustrated)

10:45 *611.* DAVIS, DAVID E., and JOHN J. CHRISTIAN, Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland. The Relations of Adrenal Size to Social Organization in Wild Rats. (Illustrated 2 x 2)

11:10 *612.* JAMES, W. T., University of Georgia, Athens, Georgia. Social Organizations in Dogs. (Illustrated 3¼ x 4)

11:35 *613.* COLLIAS, N., Illinois College, Jacksonville, Illinois. A Study of Experimental Stress in Relation to Some Aspects of Social Behavior in Sheep and Goats.

TUESDAY NOON, SEPTEMBER 7

12:00 **Animal Behaviorists' Luncheon.** ***Section of University cafeteria.***

TUESDAY AFTERNOON, SEPTEMBER 7

Concurrent Sessions A and B

Session A. Contributed Papers. Dynamics of Succession. *Room 104, Law School.* H. J. OOSTING, presiding.

2:00 *614.* LEISMAN, GILBERT A., University of Minnesota, Minneapolis, Minn. Natural Development of Vegetation on the Iron Mine Dumps of Northern Minnesota. (Illustrated 2 x 2)

2:20 *615.* QUARTERMAN, ELSIE, Vanderbilt University, Nashville, Tennessee. Early Succession in Abandoned Cropland in Middle Tennessee. (Illustrated 2 x 2)

2:40 *616.* KEEVER, CATHERINE, Limestone College, Gaffney, South Carolina. A New Dominant in the First Year of Old Field Succession in Northwestern South Carolina. (Illustrated 2 x 2)

3.00 *617.* RICE, E. L., University of Oklahoma, Norman, Oklahoma. Some Factors Affecting Succession in Abandoned Farm Lands in Central Oklahoma.

3:20 *618.* ODUM, EUGENE P., University of Georgia, Athens, Georgia. Organic Production and Turnover in Old Field Succession on the Savannah River Area. (Illustrated 2 x 2 and 3¼ x 4)

3:40 *619.* HUSS, DONALD L., and ROBERT A. DARROW, A. & M. College of Texas, College Station, Texas. Succession Following Fire in the Ash-Juniper Woodland in Edwards Plateau Region of Texas. (Illustrated 2 x 2)

Session B. Invited Papers. Social Organization in Animals. Part II. *Science Reading Room, Main Library.* A Program Arranged by J. P. SCOTT in Honor of W. C. ALLEE. A. M. GUHL presiding.

2:00 *620.* HALE, E. B., Pennsylvania State University, State College, Pa. Androgen Levels and Breed Differences in the Fighting Behavior of Cocks. (Illustrated 2 x 2)

2:08 *621.* HALE, E. B., Pennsylvania State University, State College, Pa. Breed Recognition in the Social Interactions of Domestic Fowl. (Illustrated 2 x 2)

2:15 *622.* DENNISTON, ROLLIN H., II, University of Wyoming, Laramie, Wyoming. An Attempt at Quantification and Comparison of Sex Behavior in an Annual-Breeding Rodent, *Citellus richardsonii elegans.*

2:23 *623.* DENNISTON, ROLLIN H., II, University of Wyoming, Laramie, Wyoming. The Comparison of the Natural Responses and a Recently Learned Response as an Expression of Sex Drive Level.

2:30 *624.* BOVBJERG, RICHARD V., Washington University, St. Louis, Missouri. Some Factors Affecting Aggressive Behavior in Crayfish.

2:45 *625.* HARRIS, VAN T., Fish and Wildlife Service, Lafayette, Louisiana. Reproductive Isolation and Social Behavior Between Two Subspecies of *Peromyscus maniculatus.* (Illustrated 2 x 2)

3:00 *626.* KING, JOHN A., Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Social Relations of the Domestic Guinea Pig Living Under Semi-natural Conditions.

3:15 *627.* BRODBECK, ARTHUR J., Boston University, Boston, Massachusetts, and Roscoe B. Jackson Memorial Laboratory, Hamilton Station, Bar Harbor, Maine. An Exploratory Study of the Acquisition of Dependency Behavior in Puppies.

3:30 *628.* SCHEIN, MARTIN W., and M. H. FOHRMAN, Louisiana Agricultural Experiment Station, Jeanerette, La., and USDA, Dairy Husbandry Research Branch, Beltsville, Md. The Effect of Rank Separation on the Intensity of Contests in Dairy Cows. (Illustrated 2 x 2)

3:45 *629.* SCOTT, J. P., Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. The Analysis of Social Organization in Animals. (Illustrated 3¼ x 4)

4:00 **Annual Business Meeting,** Ecological Society of America.

WEDNESDAY MORNING, SEPTEMBER 8

Session A. ***Science Reading Room, Main Library.*** EUGENE P. ODUM, Discussion Leader.

Symposium. Interspecific Competition and Cooperation—to What Extent Do They Control Abundance and Distribution? A Special Program of Invited Papers and Discussions in Honor of W. C. ALLEE.

a. L. CHARLES BIRCH, University of Sydney, Australia. The Gap Between Theoretical and Experimental Models and the Study of Competition in Nature.

b. FRANK A. PITELKA, University of California, Berkeley, California. Competition Among Lemming Predators in the Arctic. (Illustrated 2 x 2)

c. PETER W. FRANK, University of Missouri, Columbia, Missouri. Competition in Branchiopods.

d. CATHERINE KEEVER, Limestone College, Gaffney, S. C. Role of Competition in Old Field Plant Succession.

e. PAUL BURKHOLDER, University of Georgia, Athens, Ga. Ecology of Antibiosis: the Role of Antibiotics in Natural Soils and Waters.

WEDNESDAY AFTERNOON, SEPTEMBER 8

2:00 **Session A. Invited Papers and Panel Discussion. 1954 Perspectives in Human Ecology.** ***University Auditorium.*** FRANCIS C. EVANS, presiding.

a. EDWARD S. DEEVEY, JR., Yale University. Society in Space and Time.

b. EDGAR ANDERSON, Missouri Botanical Gardens. Man's Effect on Floras and Faunas: A Key to the Fundamental Problem of Ecology.

c. PAUL B. SEARS, Yale University. Human Ecology: A Problem in Synthesis.

d. CARL O. SAUER, University of California. Man the Modifier of Tropical and Arid Margins.

e. GEORGE MURDOCK, Yale University. Point of View of the Anthropologist.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

TOMATO GENETICS COOPERATIVE

WEDNESDAY EVENING, SEPTEMBER 8

A meeting of the newly-organized Tomato Genetics Cooperative will be held at 7:30 p.m. in Room 357, Administration Building. CHARLES M. RICK, presiding.

11. GENETICS SOCIETY OF AMERICA

The Genetics Society of America was organized in New Orleans, Louisiana, in 1931, an outgrowth of the Genetics Sections of the American Society of Zoologists and of the Botanical Society of America. Its objectives are to provide facilities for association among students of heredity and to encourage a closer relationship between workers in genetics and those in related sciences. Total membership, 979.

President: J. T. PATTERSON, University of Texas, Austin, Texas.
Vice-President: R. A. BRINK, University of Wisconsin, Madison, Wis.
Treasurer: N. H. GILES, JR., Yale University, New Haven, Conn.
Secretary: C. P. OLIVER, University of Texas, Austin, Texas.
Representative to the Governing Board, A.I.B.S.: CARL SWANSON, Johns Hopkins University, Baltimore, Md.
Local Committee Representative: F. H. HULL.

Johnson Lounge, in the Florida Union, has been assigned to the Genetics Society of America for council and committee meetings during the convention period.

Program of the Twenty-Third Annual Meeting

MONDAY MORNING, SEPTEMBER 6

Concurrent Sessions A and B

Session A. Cytology, Speciation. *Room 101, Science Hall.* META S. BROWN, presiding.

9:00 *631.* BOWDEN, WRAY M., Department of Agriculture, Ottawa, Canada. Cytotaxonomic and Genetic Studies in Section *Dortmanna* of the Genus *Lobelia.* (Illustrated 2 x 2)

9:10 *632.* HYDE, BEAL B., Indiana University, Bloomington, Ind. Mitotic Coiling of the Differentiated Chromosomes of *P. ovata.* (Illustrated 2 x 2)

9:20 *633.* SPARROW, A. H., V. POND, and SELMA KOJAN, Brookhaven National Uaboratory, Upton, N. Y. Microsporogenesis in Excised Anthers of *Trillium erectum* Grown on Sterile Culture Media. (Illustrated 3¼ x 4)

9:30 *634.* GARBER, E. D., University of Chicago, Chicago, Ill. The Orientation of Multivalents at Metaphase I in the Subgenera *Para-sorghum* and *Stiposorghum*, Genus *Sorghum.* (Illustrated 3¼ x 4)

9:40 *635.* FABERGÉ, A. C., University of Missouri, Columbia, Mo. The Analysis of Chromosome Breaks by Endosperm Phenotype in Maize. (Illustrated 2 x 2)

9:50 *636.* BOWEN, C. C., and A. H. SPARROW, Brookhaven National Laboratory, Upton, N. Y. Radiosensitivity of Several Meiotic Stages of *Lilium.* (Illustrated 2 x 2)

10:00 *637.* WOLFF, SHELDON, and R. C. VAN BORSTEL, Oak Ridge National Laboratory, Oak Ridge, Tenn. The Effect of Pre- and Post-radiation Centrifugation on the Chromosomes of *Tradescantia* and *Vicia.* (Illustrated 3¼ x 4)

10:10 *638.* SOKAL, R. R., University of Kansas, Lawrence, Kan. Selection for the Separation of Genetic Correlates. (Illustrated 3¼ x 4)

10:20 *639.* LEVITAN, MAX, Virginia Polytechnic Institute, Blacksburg, Va. Additional Evidence of Position Effects in Natural Populations. (Illustrated 3¼ x 4)

10:30 *640.* HEXTER, WILLIAM M., Amherst College, Amherst, Mass. A Population Analysis of Heterozygote Frequencies in *Drosophila melanogaster.* (Illustrated 3¼ x 4)

10:40 *641.* BLIGHT, WILLIAM C. (Introduced by H. L. Carson), Washington University, St. Louis, Mo. A Study of Population Structure in *Drosophila americana* near St. Louis, Mo. (Illustrated 3¼ x 4)

10:50 *642.* VOLPE, E. PETER, Newcomb College of Tulane University, New Orleans, La. Mode of Inheritance of the Mottled Pigment Pattern in *Rana kandiyohi.* (Illustrated 3¼ x 4)

Session B. Biochemical, Microorganisms. *Room 102, Science Hall.* J. WERNER BRAUN, presiding.

9:00 *643.* FOX, ALLEN S., Michigan State College, East Lansing, Mich. Paper Chromatographic Studies of the Effects of the Lozenge Pseudoalleles and the Y-chromosome in *Drosophila melanogaster.* (Illustrated 3¼ x 4)

9:10 *644.* SHAPARD, PAULINE B. (Introduced by M. M. Green), University of California, Davis, Calif. A Physiological Comparison of Vermilion Eye Color Mutants of *Drosophila melanogaster.*

9:20 *645.* FORRO, FREDERICK, JR., (Introduced by R. S. Caldecott), Brookhaven National Laboratory, Upton, N. Y. P^{32} Distribution Among the Progeny of Labeled Bacteria. (Illustrated 3¼ x 4)

9:30 *646.* ZAMENHOF, STEPHEN, GRACE LEIDY, and EROS HAHN, Columbia University, New York, N. Y. Unstability of Transforming Principle Induced by Mutagenic Agents. (Illustrated 3¼ x 4)

9:40 *647.* MORSE, M. L. (Introduced by M. R. Irwin), University of Wisconsin, Madison, Wis. Transduction of Certain Loci in *Escherichia coli* K-12. (Illustrated 3¼ x 4)

9:50 *648.* WOODARD, VAL W., Brookhaven National Laboratory, Upton, N. Y. Mutation Rates at One Glutamic Acid Locus in *Neurospora crassa.* (Illustrated 3¼ x 4)

10:00 *649.* STRAUSS, BERNARD S., Syracuse University, Syracuse, N. Y. Studies on the Metabolism of Acetate by Acetate-requiring Mutants of *Neurospora crassa.* (Illustrated 3¼ x 4)

10:10 *650.* PITTENGER, THAD H., and K. C. ATWOOD, Oak Ridge National Laboratory, Oak Ridge, Tenn. The Relation of Growth Rate to Nuclear Ratio in *Neurospora* Heterocaryons. (Illustrated 3¼ x 4)

10:20 *651.* DOUDNEY, C. O., University of Texas, Austin, Tex. (Oak Ridge National Laboratory, Oak Ridge, Tenn.) Gene Interaction and Temperature Response of the Threonine Inhibited Strain of *Neurospora.*

10:30 *652.* WAGNER, R. P., University of Texas, Austin, Tex. An Apparent Metabolic Block Induced in a Neurospora Mutant by Threonine. (Illustrated 3¼ x 4)

10:40 *653.* RAGLAND, JAMES B., University of Texas, Austin, Tex. A Strain of *Neurospora* Inhibited by Histidine. (Illustrated 3¼ x 4)

10:50 *654.* FUERST, ROBERT, University of Texas, Austin, Tex. Differences in Free Intracellular Amino Acids in *Neurospora.*

11:00 *655.* PALM, JOY, and M. R. IRWIN, University of Wisconsin, Madison, Wis. A "Hybrid Substance" Associated with a Species-specific Antigen in Backcross Hybrids. (Illustrated 3¼ x 4)

11:10 *656.* JAMES, ALLEN P., Atomic Energy of Canada, Ltd., Chalk River, Ont. Evidence of Irradiation Induced Somatic Crossing Over in Diploid Yeast. (Illustrated 3¼ x 4)

11:20 *657.* RAUT, CAROLINE, Detroit Institute of Cancer Research and Wayne University, College of Medicine, Detroit, Mich. The Effect of Ultraviolet Light of Various Wavelengths on the Production of Cytochrome-deficient Yeast. (Illustrated 3¼ x 4)

MONDAY AFTERNOON, SEPTEMBER 6

2:00 **Symposium.** ***Science Reading Room, Library.*** C. P. OLIVER, presiding.

Introductory Comments.

a. M. M. GREEN, University of California, Davis, Calif. Pseudoallelism and the Gene Concept.

b. E. B. LEWIS, California Institute of Technology, Pasadena, Calif. Some Aspects of Position Pseudoallelism.

c. J. R. LAUGHNAN, University of Illinois, Urbana, Ill. Structural and Functional Bases for the Action of the "A" Alleles in Maize.

d. CLYDE STORMONT, University of California, Davis, Calif. Blood Groups and Genes With Particular Reference to the Similarities of the "Rh" System of Man and the "B" System of Cattle.

e. S. G. STEPHENS, North Carolina State College, Raleigh, N. C. Summary, Synthesis, and Critique.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida. *"The Passing of the Fleet."*

TUESDAY MORNING, SEPTEMBER 7

Invitation Program. ***Room 101, Science Hall.*** FRED H. HULL, presiding.

9:00 *658.* ROBINSON, H. F., R. E. COMSTOCK, and P. H. HARVEY, North Carolina State College, Raleigh, N. C. Heterosis in Crosses Between Open-pollinated Varieties in Corn. (Illustrated 2 x 2)

9:20 *659.* SLATIS, HERMAN M., McGill University, Montreal, Canada. Brown Locus Position Effects in *Drosophila melanogaster.* (Illustrated 3¼ x 4)

9:40 *660.* BROWN, META S., Texas Agricultural Experiment Station, College Station, Tex. A Comparison of Pachytene and Metaphase Pairing in Species Hybrids of *Gossypium.* (Illustrated 3¼ x 4)

10:00 *661.* SINGLETON, W. R., and A. L. CASPAR, Brookhaven National Laboratory, Upton, N. Y. Effect of Time of Gamma Radiation on Microspore Mutation Rate in Maize. (Illustrated)

10:20 *662.* BRAUN, WERNER, JEANNE WHALLON, and W. L. MAUZY, Camp Detrick, Frederick, Md. Further Data on the Selective Effects of DNA upon Bacterial Population Changes. (Illustrated 3¼ x 4)

10:40 *663.* HSU, T. C., University of Texas Medical Branch, Galveston, Tex. Abnormal Mitosis in Neoplastic Cells and its Implications on Dynamic Cytology. (Illustrated 16 mm movie, silent)

TUESDAY NOON, SEPTEMBER 7

12:00 **Annual Luncheon and Business Meeting.** ***Student Service Center*** (Upstairs).

TUESDAY AFTERNOON, SEPTEMBER 7

Concurrent Sessions C and D

2:00 **Session C. Demonstrations.** ***Room 2, Science Hall.***

664. ANNAN, MURVEL E., University of Nebraska. Lincoln, Neb. Effects of X-rays on *Drosophila robusta* Females.

665. BAKER, WILLIAM K., Oak Ridge National Laboratory, Oak Ridge, Tenn. Chromosome Association and Segregation in Polysomic *Drosophila* males.

666. BLAIR, W. FRANK, and DAVID PETTUS, University of Texas, Austin, Tex. Differentiation in the Mating Call Among Southwestern Anuran Amphibians.

667. MEYER, JAMES R., Delta Branch of Mississippi Agricultural Experiment Station, Stoneville, Miss. Genes from Cotton Species.

668. DERMEN, HAIG, U. S. Plant Industry, Beltsville, Md. Histogenetic Factors in Color and Nectarine Sports in Peach.

669. DERMEN, HAIG, U. S. Plant Industry, Beltsville, Md. Location of Cells and Mode of Mitosis.

670. ATWOOD, K. C., FRANK MUKAI, and THAD PITTENGER, Oak Ridge National Laboratory, Oak Ridge, Tenn. *Neurospora* Techniques for Large-scale Studies of Recessive Lethal Mutation.

671. BOYES, J. W., McGill University, Montreal, Canada. Karyotypes and Their Measurement in Higher Diptera.

672. CLAYTON, FRANCIS E., University of Texas, Austin, Tex. The Development of the Compound Eye Lozene Alleles in *Drosophila melanogaster.*

Session D. Physiological, Developmental. ***Room 101, Science Hall.*** CLYDE E. KEELER, presiding.

2:30 *673.* MILLER, WILMER J., University of Wisconsin, Madison, Wis. Segregation of Species-specific Antigens and the "Hybrid Substance" in Backcross Hybrids Following a Generic Cross in *Columbidae.* (Illustrated 3¼ x 4)

2:40 *674.* MORGAN, WALTER C., University of Tennessee, Knoxville, Tenn. Eventration and Exencephaly in Mouse Embryos. (Illustrated 3¼ x 4)

2:50 *675.* FUNG, SUI-TONG CHAN and JOHN W. GOWEN, Iowa State College, Ames, Iowa. Histological Observations on the Gonads of *Drosophila melanogaster* Heterozygous for the Hermaphroditic Gene, *Hr.* (Illustrated 3¼ x 4)

3:00 *676.* KALTER, HAROLD, McGill University, Montreal, Canada. Preliminary Studies on the Metabolic Factors Involved in the Production of Cleft Palate in Mice. (Illustrated 2 x 2)

3:10 *677.* MARKERT, C. L., and GLENN FISCHER, University of Michigan, Ann Arbor, Mich. Melanogenesis in Cells of Diverse Genotype Cultured *in Vitro.* (Illustrated 3¼ x 4)

3:20 *678.* MARTIN, ALBERT, JR., VA Hospital, Pittsburgh, Pa. The Golgi Bodies as Indicators of a Common Genotype. (Illustrated 2 x 2)

3:30 *679.* WALKER, B. E., and F. CLARKE FRASER, McGill University, Montreal, Canada. The Embryological Basis for a Strain Difference in Susceptibility to a Teratogenic Action of Cortisone. (Illustrated 3¼ x 4)

3:40 *680.* RUNNER, M. N., Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me. Inherited Hypofunction of the Female Pituitary in the Sterile-obese Syndrome in the Mouse. (Illustrated 3¼ x 4)

3:50 *681.* RATTY, FRANK J., University of California, Berkeley, Cal. Some X-ray Induced Effects on Embryonic Viability in White Leghorn Chickens. (Illustrated 3¼ x 4)

4:00 *682.* MEYER, HELEN V., Indiana University, Bloomington, Ind. Crossing Over in the Germ Line of *Drosophila melanogaster* Males Following Irradiation of the Embryonic Pole Cells with Ultraviolet. (Illustrated 3¼ x 4)

WEDNESDAY MORNING, SEPTEMBER 8

Session E. Formal Genetics, Statistical. ***Room 101, Science Hall.*** S. G. STEPHENS, presiding.

9:00 *683.* VERDEROSA, F., and H. J. MULLER, Indiana University, Bloomington, Ind. Another Case of Dissimilar Characters in *Drosophila* Apparently Representing Changes of the Same Locus. (Illustrated 3¼ x 4)

9:10 *684.* ABRAHAMSON, S., I. H. HERSKOWITZ, and H. J. MULLER, Indiana University, Bloomington, Ind. Genetic Proof for Half-translocations Derived from Irradiated Oocytes of *Drosophila melanogaster.* (Illustrated 3¼ x 4)

9:20 *685.* PARKER, D. R., Oak Ridge National Laboratory, Oak Ridge, Tenn. Role of the Y-chromosome in Induced Detachment of Attached-X-chromosomes in *Drosophila melanogaster.* (Illustrated 3¼ x 4)

9:30 *686.* BELL, A. EARL, Purdue University, Lafayette, Ind. A Gene in *Drosophila melanogaster* that Produces All Male Progeny. (Illustrated 2 x 2)

9:40 *687.* SPOFFORD, JANICE B., University of Chicago, Chicago, Ill. The Effect of Expressivity of Selection Against Eyelessness in *Drosophila melanogaster.* (Illustrated 3¼ x 4)

9:50 *688.* HINTON, TAYLOR, University of California, Los Angeles, Calif. The Genetic Analysis of a Nucleic Acid Requirement in *Drosophila.*

10:00 *689.* SOOST, ROBERT K., University of California, Riverside, Calif. Gene Dosage Effect of the *Wo* Gene in Tomato. (Illustrated 2 x 2 and 35 mm.)

10:10 *690.* BURDICK, ALLAN B., Purdue University, Lafayette, Ind. Two Types of Heterosis in the Tomato Revealed by Constant Parent Regression Analysis. (Illustrated 3¼ x 4)

10:20 *691.* JANICK, JULES, and E. C. STEVENSON, Purdue University, Lafayette, Ind. Genetics of the Monoecious Character in Spinach. (Illustrated 2 x 2)

10:30 *692.* JANICK, JULES, and E. C. STEVENSON, Purdue University, Lafayette, Ind. The Effects of Polyploidy on Sex Expression in Spinach. (Illustrated 2 x 2)

10:40 *693.* BRILES, W. E., Texas A and M College, College Station, Tex. Evidence for Overdominance of the *B* Blood Group Alleles in the Chicken. (Illustrated 3¼ x 4)

10:50 *694.* BUTLER, L., University of Toronto, Toronto, Ont., Canada. The Relation of Squint Eyes, Open at Birth, and Wavy in the House Mouse.

11:00 *695.* TASCHDJIAN, EDGAR, St. Francis College, Brooklyn, N. Y. Genetics, Information and Communication.

11:10 *696.* HOWE, H. BRANCH, JR., University of Wisconsin, Madison, Wis. Crossing-over in the First (Sex) Chromosome of *Neurospora crassa.* (Illustrated 3¼ x 4)

11:20 *697.* LINDEGREN, CARL C., and ERNEST E. SHULT, Southern Illinois University, Carbondale, Ill. A General Theory of Crossing-over.

11:30 *698.* TAYLOR, J. HERBERT, Columbia University, New York, N. Y. Nucleic Acid Metabolism at the Intracellular Level.

WEDNESDAY AFTERNOON, SEPTEMBER 8

Session F. Radiation. ***Room 207, Administration Building.*** A. M. WINCHESTER, presiding.

2:00 *699.* YANDERS, A. F., Northwestern University, Evanston, Ill. An Influence of Age at Time of Treatment of the Induction of Minute Effects in the Sperm of *Drosophila melanogaster.* (Illustrated 3¼ x 4)

2:10 *700.* MICKEY, GEORGE H., and ARMON F. YANDERS, Northwestern University, Evanston, Ill. The Production of Dominant Minutes in *Drosophila* Sperm Irradiated with X-rays, Gamma-rays and Fast Neutrons. (Illustrated 3¼ x 4)

2:20 *701.* KING, R. C., and EUNICE M. WOOD, Brookhaven National Laboratory, Upton, N. Y. Sex-linked Lethal Mutations Induced by Thermal Neutrons in Male and Female *Drosophila melanogaster.* (Illustrated 3¼ x 4)

2:30 *702.* ALEXANDER, MARY L., FRANCES L. CLAYTON, and W. S. STONE, University of Texas, Austin, Tex. The Induction of Translocations by X-radiations at Different Stages of Germ Cell Development in *Drosophila virilis.* (Illustrated 3¼ x 4)

2:40 *703.* TELFER, J. D., and S. ABRAHAMSON, Indiana University, Bloomington, Ind. The Higher Egg Mortality Associated with Insemination on the First Rather than the Second Day After Irradiation of *Drosophila* males. (Illustrated 3¼ x 4)

2:50 *704.* ABRAHAMSON, S., and J. D. TELFER, Indiana University, Bloomington, Ind. Sex Chromosome Loss and Translocation Frequencies in *Drosophila melanogaster* After X-raying Sperm in Males or in Females. (Illustrated 3¼ x 4)

3:00 *705.* HERSKOWITZ, I. H., and A. SCHALET, Indiana University, Bloomington, Ind. Sex-linked Recessive Lethal Mutations Connected with Gross Chromosomal Rearrangements Following Nitrogen Mustard Treatment of Mature *Drosophila* Sperm. (Illustrated 3¼ x 4)

3:10 *706.* SCHALET, A., and I. H. HERSKOWITZ, Indiana University, Bloomington, Ind. Chemical Mutagenesis of Mature *Drosophila* Sperm Baths and Postcopulatory Vaginal Douches. (Illustrated 3¼ x 4)

3:20 *707.* SMITH, HAROLD H., and THORAYA A. LOTFY, Cornell University, Ithaca, N. Y. Comparative Effects of Beta-propiolactone and Ceepryn (Cetyl-Pyridinium Chloride) on Chromosomes of *Vicia* and *Allium.*

3:30 *708.* SAND, SEAWARD A., HAROLD H. SMITH, and ARNOLD H. SPARROW, Cornell University, Ithaca, N. Y. Stimulation by Chronic Gamma Irradiation of the Spontaneous Rates of Heritable Somatic Instabilities in a Clone of *Nicotina.* (Illustrated 2 x 2)

3:40 *709.* STEFFENSEN, DALE, Brookhaven National Laboratory, Upton, N. Y. Increased Frequency of X-ray-induced Chromosomal Aberrations in *Tradescantia* Produced by a Mineral-nutrient Treatment. (Illustrated 3¼ x 4)

3:50 *710.* BEATTY, ALVIN V., and JEANNE W. BEATTY, Emory University, Emory University, Ga. The Influence of Oxygen on the Physiological Effects of X-radiation in the Microspores of *Tradescantia paludosa.* (Illustrated 3¼ x 4)

4:00 *711.* KIMBALL, R. F., and NENITA GAITHER, Oak Ridge National Laboratory, Oak Ridge, Tenn. Lack of an Effect of a High Dose of X-rays on Aging in *Paramecium aurelia*, variety 1. (Illustrated 3¼ x 4)

4:10 *712.* GOWEN, JOHN W., and JANICE STADLER, Iowa State College, Ames, Iowa. Effect of Acute and Chronic X-ray and Nuclear Irradiations on Life Spans of Different Strains of Mice. (Illustrated 3¼ x 4)

4:20 *713.* RUSSELL, LIANE BRAUCH, and R. JENELLE SPEAR, Oak Ridge National Laboratory, Oak Ridge, Tenn. X-ray-induced Dominant Lethals in Mouse Oocytes and Their Relation to Irradiation-to-ovulation Interval. (Illustrated 3¼ x 4)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

Papers to be Read by Title.

714. BLAUCH, BERTINA M., University of Pennsylvania, Philadelphia, Pa. Dzierzon's Law and Free Oviposition in *Melittobia.*

715. DUNCAN, ROBERT E., JOHN W. WOODARD, and PHILIP S. WOODS, University of Wisconsin, Madison, Wis. Cytological Effects of Sodium Barbital.

716. FORSTHOEFEL, PAULINUS F., University of Detroit, Detroit, Mich. Further Studies on the Developmental Genetics of Luxoid, a Skeletal Variation in the House Mouse.

717. HOROWITZ, N. H., and MARGUERITE FLING, California Institute of Technology, Pasadena, Calif. The Autocatalytic Production of Tyrosinase in Extracts of *Drosophila melanogaster.*

718. HUESTIS, R. R., and RUTH S. WILLOUGHBY, University of Oregon, Eugene, Oregon. Neonatal Jaundice in *Peromyscus.*

719. KENWORTHY, WALTER, Brown University, Providence, Rhode Island. Effect of Oxygen Concentration on the Survival Rate of Irradiated *Habrobracon* Eggs.

720. KIMBALL, ELLIOT, Clinton Experimental Farm, Clinton, Conn. Linkage in Primary Plumage Patterns of the Fowl.

721. LEDERBERG, ESTHER M., University of Wisconsin, Madison, Wis. The Inheritance of Lysogenicity in Interstrain Crosses of *Escherichia coli.*

722. LEDERBERG, JOSHUA, University of Wisconsin, Madison, Wis. Phase Variations in *Salmonella.*

723. LEFEVRE, GEORGE, JR., and P. C. FARNSWORTH, University of Utah, Salt Lake City, Utah. Mutational Isoallelism at the Yellow and White Loci in *Drosophila.*

724. LEWIS, HERMAN W., University of California, Berkeley, Calif. Studies on a Melanoma-producing Lethal in *Drosophila.*

725. MILLER, DWIGHT D., University of Nebraska, Lincoln, Neb. Intraspecific Variation in Spermatheca Morphology in *Drosophila affinis* Sturtevant.

726. MULLER, H. J., Indiana University, Bloomington, Ind. Characteristics of the Far Stronger but "Spottier" Mutagenicity of Fast Neutrons as Compared with X-rays in *Drosophila* Spermatozoa.

727. PAULEY, S., Harvard University, Petersham, Mass. Influence of Light on Break of Dormancy in Various Tree Species.

728. PAULEY, S. S., Harvard University, Petersham, Mass. Variation in Time of Break of Dormancy Among Altitudinal Ecotypes of *Populus trichocarpa*.

729. RAY, DAVID T., Howard University, Washington, D. C. Sex Difference and Oxygen Consumption in the Wasp *Mormoniella*.

730. WHITING, P. W., University of Pennsylvania, Philadelphia, Pa. An Impaternate Gynander of the Wasp *Neralsia*.

12. MYCOLOGICAL SOCIETY OF AMERICA

The Mycological Society of America was founded in December 1931 at New Orleans, La., originating as an offshoot of the Microbiological Section of the Botanical Society of America, which section was organized in 1919. The Society, in collaboration with the New York Botanical Garden, publishes *Mycologia*, its official organ, issues a News Letter semiannually, and holds an annual meeting and an annual foray. In the last few years it has become the custom to hold the foray immediately preceding the annual meeting and in the same general locality. Total membership, 680.

President: LELAND SHANOR, University of Illinois, Urbana, Ill.
Vice-President: DONALD P. ROGERS, New York Botanical Garden, New York.
Secretary-Treasurer: CONSTANTINE J. ALEXOPOULOS, Michigan State College, East Lansing, Mich.
Representative to the Governing Board, A. I. B. S.: JOHN N. COUCH, University of North Carolina, Chapel Hill, N.C.
Local Committee Representative: A. S. MULLER.

Room 404, Newell Hall, has been reserved for the entire convention period for the use of the Mycological Society of America for council, committee and other small meetings.

FRIDAY, SATURDAY AND SUNDAY, SEPTEMBER 3, 4 AND 5

The annual foray of the Mycological Society of America will be held at the University of Florida, September 3 to 5, 1954, immediately preceding the A.I.B.S. meetings. The group will meet at Parking Area No. 9, Fletcher Drive and Stadium Road prior to each trip and return to the same place. This is very near the Foray Room, 101 Building "J" where the collections will be investigated, displayed and dried.

FRIDAY, SEPTEMBER 3

8:00 All day trip. A.M. Rochelle Hammock—7 miles East of Gainesville. P.M. Magnesia Springs—15 miles East of Gainesville. Box Lunch and Swimming at Magnesia Springs.

SATURDAY, SEPTEMBER 4

8:00 Gulf Hammock—50 miles Southwest of Gainesville. Lunch at Hammock Inn, Gulf Hammock.

SUNDAY, SEPTEMBER 5

8:00 All day trip. A.M. Sugarfoot—4 miles West of Gainesville. P.M. Buzzard's Roost—7 miles West of Gainesville. Box lunch at Sugarfoot.

SUNDAY EVENING, SEPTEMBER 5

8:00 **Meeting of the Council,** Mycological Society of America. ***Room 404, Newell Hall.***

MONDAY MORNING, SEPTEMBER 6

Contributed papers. ***Room 108, Floyd Hall.*** LELAND SHANOR, presiding.

8:30 **Business Meeting.**

9:00 **Address of the President.** LELAND SHANOR, University of Illinois, Urbana, Illinois. "Some Observations and Comments on the Laboulbeniales."

9:45 *731.* ROGERS, DONALD P., The New York Botanical Garden, New York, New York. *Article 23 F.*

9:55 *732.* JOHNSON, T. W., JR., University of Mississippi, University, Mississippi. Inoculation Studies wth a Polysporangiate *Rozella* Parasitic on *Dictyuchus anomalus*. (Illustrated 3¼ x 4)

10:05 *733.* HESSELTINE, C. W., Northern Utilization Research Branch, Peoria, Illinois. Genera of the Mucorales with Notes on their Synonymy. (Illustrated 3¼ x 4)

10:20 *734.* FENNEL, DOROTHY I., and KENNETH B. RAPER, Northern Utilization Research Branch, Peoria, Illinois, and University of Wisconsin, Madison, Wisconsin. New Species and Varieties of *Aspergillus*. (Illustrated 3¼ x 4)

10:30 *735.* CAIN, ROY F., University of Toronto, Toronto, Ontario. A New Genus of the Aspergillaceae and its Relationships. (Illustrated 3¼ x 4)

10:45 *736.* CAIN, ROY F., and NANCY A. HASTINGS, University of Toronto, Toronto, Ontario. A New Species of *Sphaerospora* with a *Botrytis* Stage. (Illustrated 3¼ x 4)

11:00 *737.* MILLER, JULIAN H., University of Georgia, Athens, Georgia. The Development of *Phyllachora lespedezae*. (Illustrated 2 x 2)

11:15 *738.* ROUTIEN, JOHN B., Chas. Pfizer & Co., Inc. Brooklyn, New York. Pycnidia and Sporodochia in an Imperfect Fungus. (Illustrated 3¼ x 4)

11:25 *739.* LUTTRELL, E. S., Georgia Experiment Station, Experiment, Georgia. The Taxonomic Relationships of *Helminthosporium sativum* and *Helminthosporium victoriae*. (Illustrated 2 x 2)

MONDAY AFTERNOON, SEPTEMBER 6

Contributed papers. ***Room 108, Floyd Hall.*** DONALD P. ROGERS, presiding.

2:00 *740.* TEXEIRA, ALCIDES RIBEIRO, and WM. BRIDGE COOKE, State Forest Service, São Paulo, Brazil, and Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio. Hyphal Systems in the Polyporales and their Use in Classification.

2:15 *741.* HARRISON, K. A., Plant Pathology Laboratory, Kentville, Nova Scotia. Studies of the Stipitate Hydnums of Nova Scotia. (Illustrated 2 x 2)

2:30 *742.* MORROW, MARIE B., and GEORGE H. MEYER, University of Texas, Austin, Texas. Seasonal Patterns in Aerobiological Populations. (Illustrated 3¼ x 4)

2:45 *743.* COOKE, WM. BRIDGE, Robert A. Taft Sanitary Engineering Center, U. S. P. H. C., Cincinnati, Ohio. The Distribution of Species of Fungi in a Small Polluted Stream.

3:00 *744.* REYNOLDS, ERNEST S., and SAMUEL P. MEYERS, University of Miami, Coral Gables, Florida. Distribution of Wood-inhabiting Marine Fungi Throughout the Bahamas, Caribbean and Adjacent River Areas. (Illustrated 3¼ x 4)

3:15 *745.* WEST, BILLY and LIBERO AJELLO, Communicable Disease Center, Chamblee, Georgia. Occurrence of *Arachniotus citrinus* in Soils. (Illustrated 2 x 2)

3:25 *746.* MEYERS, SAMUEL P., and ERNEST S. REYNOLDS, University of Miami, Coral Gables, Florida. Characteristics of a Halophilic Ascomycete Occurring over a Wide Marine Area. (Illustrated 3¼ x 4)

3:35 *747.* REYNOLDS, ERNEST S., and SAMUEL P. MEYERS, University of Miami, Coral Gables, Florida. An Unusual Ascocarpic Variation in a Halophilic Fungus. (Illustrated 3¼ x 4)

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida. "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Joint Session with the Microbiological Section of the Botanical Society of America. ***Room 108, Floyd Hall.*** VICTOR M. CUTTER, presiding.

8:30 *748.* SCHMITT, JOHN A., JR., Findlay College, Findlay, Ohio. The Host Specialization of the Powdery Mildew, *Erysiphe cichoracearum* DC. ex Mérat, from Zinnia Phlox and Cucurbits. (Illustrated 2 x 2)

8:45 *749.* GARBER, EDWARD D., University of Chicago, Chicago, Illinois. The Virulence of an Arginine-Requiring Mutant of a Bacterial Plant Pathogen on Different Hosts.

8:50 *750.* HASKINS, REGINALD H., B. BOOTHROYD, and J. S. THORN, Prairie Regional Lab., Saskatoon, Sask., Canada. New Metabolic Products of *Ustilago zeae* in Submerged Culture. (Illustrated 3¼ x 4)

9:05 *751.* CANTINO, EDWARD C., University of Pennsylvania, Philadelphia, Pa. The Coupling Between the Bicarbonate Trigger Mechanism and Melanin Synthesis during Morphogenesis in *Blastocladiella*. (Illustrated 3¼ x 4)

9:20 *752.* LILLY, VIRGIL G., and HORACE L. BARNETT, West Virginia University, Morgantown, West Virginia. On the Utilization of D- and L-Arabinose by Fungi. (Illustrated 2 x 2)

9:35 **Business Meeting,** Microbiological Section, Botanical Society of America.

10:05 *753.* DARBY, RICHARD T., and GABRIEL R. MANDELS, U. S. Army Quartermaster Corps., Pioneer Research Lab., Philadelphia, Pa. Effect of Source and Age on Fungous Spore Physiology. (Illustrated 3¼ x 4)

10:20 *754.* SUSSMAN, ALFRED S., ROBERT J. LOWRY, and BERTA HEIDENHAIN, University of Michigan, Ann Arbor, Mich. Modification of the Permeability of Ascospores of *Neurospora* by Enzymatic Treatment. (Illustrated 3¼ x 4)

10:35 *755.* CALPOUZOS, LUCAS, Atkins Garden and Research Lab., Harvard University, Cienfuegos, Cuba. Studies on Sporulation of *Cercospora musae* in Pure Culture. (Illustrated 3¼ x 4)

10:50 *756.* CRAVEN, LUCILLE, Biological Laboratories, Harvard University, Cambridge, Mass. Physiological Variations in *Cladosporium* Strains with Reference to High Osmotic Concentrations and to Tyrosinase Activity. (Illustrated 3¼ x 4)

11:05 *757.* JONES, KENNETH L., University of Michigan, Ann Arbor, Michigan. An Analysis of *Streptomyces* Populations in Soil. (Illustrated 3¼ x 4)

TUESDAY AFTERNOON, SEPTEMBER 7

1:30 **Fifth Annual Lecture of the Mycological Society of America. *Room 108, Floyd Hall.*** LELAND SHANOR, presiding.
WILLIAM H. WESTON, Harvard University, "*Quo vadimus mycologici?*"

Contributed papers. *Room 108, Floyd Hall.* DONALD P. ROGERS, presiding.

2:40 *758.* TASCHDJIAN, C. L., and E. MUSKATBLIT, New York University Post-Graduate Medical School, New York, New York. Hyphal Fusion Between *Trichophyton tonsurans* Variants as an Indication of their Systematic Position. (Illustrated 2 x 2)

2:55 *759.* SUTTER, LOYAL S., Veterans Administration Medial Teaching Group Hospital, Memphis, Tennessee. The Value of the Catalase Reaction in the Identification of *Actinomyces bovis.* (Illustrated 3¼ x 4)

3:10 *760.* SCHERR, GEORGE H., Creighton University School of Medicine, Omaha, Nebraska. The Therapeutic Effectiveness of Piromen for Experimental Moniliasis in Mice. (Illustrated 3¼ x 4)

3:25 *761.* MANKOWSKI, ZBIGNIEW T., The Institute for Cancer Research, Philadelphia, Pennsylvania. Experimental Pathogenicity of *Candida sp.* (Illustrated 3¼ x 4)

3:40 *762.* AJELLO, LIBERO, Communicable Disease Center, Chamblee, Georgia. A Red Variety of the Dermatophyte, *Microsporum gypseum.*

4:00 *763.* AJELLO, LIBERO, and MALCOM S. FERGUSON, Communicable Disease Center, Chamblee, Georgia. The Laboratory Identification of *Blastomyces dermatitidis.* (Film Strip)

WEDNESDAY MORNING, SEPTEMBER 8

8:00 **Joint Session with the Society of Industrial Microbiology. *Browsing Room, Main Library.*** FREDERICK T. WOLF, presiding.

WEDNESDAY AFTERNOON, SEPTEMBER 8

Joint Session with the Microbiological Section of the Botanical Society of America. *Room 108, Floyd Hall.* DONALD P. ROGERS, presiding.

2:00 *764.* KARLING, JOHN S., Purdue University, Lafayette, Indiana. The Cytology of Host Reaction and Gall Development of *Synchytrium australe.* (Illustrated 3¼ x 4)

2:20 *765.* EL-ANI, ARIF S., Prairie Regional Research Lab., Saskatoon, Sask., Canada. The Chromosomes of *Hypomyces solani* F. *Cucurbitae.* (Illustrated 3¼ x 4)

2:40 *766.* OLIVE, LINDSAY O., Columbia University, New York. Cross-Karyogamy and Recombination in the Homothallic Fungus, *Sordaria fimicola.* (Illustrated 3¼ x 4)

3:00 *767.* BISTIS, GEORGE E., Columbia University, New York. Early Stages in the Sexual Reproduction of *Ascobolus stercorarius.* (Illustrated 3¼ x 4)

3:20 *768.* SPILTOIR, CHARLES F., University of Bridgeport, Bridgeport, Conn. Life Cycle of *Pericystis apis* Maassen. (Illustrated 3¼ x 4)

3:40 *769.* WICKERHAM, LYNFERD J., and KERMIT A. BURTON, Northern Utilization Branch, Peoria, Illinois. New Materials and Procedures for Genetical Studies of Yeasts. (Illustrated 3¼ x 4)

4:00 *770.* SNIDER, PHILIP J., Harvard University, Cambridge, Mass. A Pure Culture Study of Spontaneous Variation within One Isolate of *Armillaria mellea* (Vahl) Quelet. (Illustrated 3¼ x 4)

4:20 *771.* MORROW, MARIE BETZNER, and GEORGE H. MEYER, University of Texas, Austin, Texas. Seasonal Patterns in Aerobiological Populations. (Illustrated 3¼ x 4)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House. *Broward Hall,*** lower lobby and terrace.

DON'T FORGET YOUR PROGRAM

If you belong to a Member Society of the A.I.B.S. and receive your Program through the mails in August, please remember to bring it to Gainesville. We're sorry—but extra copies will cost $1.00.

13. NATIONAL ASSOCIATION OF BIOLOGY TEACHERS

This Association was formed in 1936 at the Atlantic City meeting of the Union of American Biological Sciences, largely under the leadership of Oscar Riddle. The official journal, *The American Biology Teacher,* has appeared regularly eight times a year since its first issue in October, 1939. With a membership of 2,300, drawn from biology teachers at secondary and college level, the work of the Society has been effective in bridging the gap between these two levels of education. The Association has completed a Conservation Education project supported by a $10,000 grant from the American Nature Association. The National Science Foundation has awarded the Association a $15,000 grant for a "Southeast Conference in Training in Biology" to be held in conjunction with the 1954 meeting of the AIBS. This is the third regional meeting held with the AIBS, of which the Association is now a Member Society.

President: ARTHUR BAKER, Crystal Lake, Ill.
President-Elect: BROTHER CHARLES, F.S.C., St. Mary's College, Winona, Minn.
First Vice-President: JOHN BREUKELMAN, Kansas State Teachers College, Emporia, Kans.
Second Vice-President: DOROTHY M. MATALA, Iowa State Teachers College, Cedar Falls, Iowa.
Secretary-Treasurer: PAUL WEBSTER, Bryon City High School, Bryon, Ohio.
Representative to the Governing Board, AIBS: RUTH DODGE, Emma Willard School, Troy, New York.
Local Committee Representative: N. E. BINGHAM.

The Florida Association of Science Teachers will meet jointly with the National Association of Biology Teachers for the following program.

AUGUST 28-SEPTEMBER 6

Southeastern Work Conference on the Teaching of Biology, supported by a grant-in-aid from the National Science Foundation. The Conference will be held in the Engineering Building on the campus of the University of Florida. Invited to participate will be those involved in the training of biology teachers in colleges and universities; high school and elementary teachers of the life sciences; school and college administrators; representatives of state departments of education; and outstanding biologists. The objectives of the Conference are: (1) to study contributions of the various biological sciences, and develop a set of basic principles and experiences which are essential for biology teachers and pupils; (2) to analyze some of the problems of biology teaching at various levels of instruction; (3) to develop a set of suggestions for the improvement of biological education; and (4) to have state educational leaders suggest methods of implementing the findings of the Conference. The Program has been divided as follows: August 28-30: Major areas of Biology—Heredity and Development, Taxonomy, Morphology, Physiology and Health, Ecology and Conservation, Evolution and Paleontology. August 31-September 2: Problems in Biology Teaching. September 2-4: Developing Plans for Improvement in Biology Teaching. September 4-5: Evaluation and Implementation. September 6: Special Programs in Biology Teaching; Monday Evening, 7:00-8:30 p.m. Conference Summary. The final meetings of September 6 are open to the public.

The Conference is under the direction of Richard L. Weaver, co-director, Samuel L. Meyer, co-director, N. E. Bingham, George Jeffers, W. Hugh Stickler, Arthur Baker, President, NABT, and Harvey E. Stork.

MONDAY MORNING, SEPTEMBER 6

P. K. Yonge Cafeteria. BROTHER CHARLES, presiding.

9:00 **Symposium: The Improvement of Biology Teaching.**

a. ROY N. JERVIS, Florida High School, Tallahassee, Fla. Wise Use of Natural Resources—Both a Means and an End.

b. SARAH CLARK, Osceolo High School, Kissimmee, Fla. The Use of Projects.

c. HELEN BOER, Elizabeth Cobb Junior High School, Tallahassee, Fla. The Utilization of a Marine Environment.

d. SAMUEL L. MEYER, Florida State University, Tallahassee, Fla. A Combination of Techniques.

e. Discussion Period.

MONDAY AFTERNOON, SEPTEMBER 6

2:00 **Joint meeting with the Teaching Section of the Botanical Society of America.** ***Engineering Building Library.***

Symposium: General Biology Courses; Their Organization and Content.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

9:00 **Joint meeting with the Teaching Section of the Botanical Society of America.** ***Engineering Building Library.***

TUESDAY AFTERNOON, SEPTEMBER 7

2:00 **Field Trip,** by bus. Group will meet in front of the front entrance, east end, of the Engineering Building. Leaders: E. S. FORD and A. M. LAESSLE. The trip will cover the Gainesville area; include plants and animals; collecting may be done and the specimens cared for in Building J.

WEDNESDAY MORNING, SEPTEMBER 8

12:00 **Luncheon.** ***Oak Room, Florida Union.*** Speaker: EDGAR A. ANDERSON, Director, Missouri Botanical Garden, St. Louis. "Man is a Part of Nature; What this means in the Teaching of High School Biology."

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

14. PHYCOLOGICAL SOCIETY OF AMERICA

The Phycological Society of America was organized in 1946 to promote research in all fields of phycology and to provide closer cooperation among phycologists, both in the United States and abroad. The Society publishes a News Bulletin and holds annual meetings under the sponsorship of the AIBS. Total membership, 248.

President: RUTH PATRICK, Philadelpthia Academy of Science, Philadelphia, Pa.
Vice-President: C. M. PALMER, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio.
Secretary: RUFUS H. THOMPSON, University of Kansas, Lawrence, Kans.
Treasurer: RICHARD D. WOOD, Rhode Island State College, Kingston, R.I.
Local Committee Representative: HAROLD HUMM (FSU)

Room 314, Florida Union has been reserved for the entire convention period for the use of the Phycological Society.

WEDNESDAY, SEPTEMBER 1

Five-day Field Trip, starting from Tallahassee. Considerable time will be spent at Alligator Harbor Marine Laboratory of Florida State University, on the Gulf of Mexico. Boats and the facilities of the station will be available. Leader: H. J. Humm, Oceanographic Institute, Florida State University, Tallahassee.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Contributed Papers. ***Room 239, Administration Building.***

9:00 *772.* BOLD, HAROLD C., Vanderbilt University, and RICHARD STARR, Indiana University. Observations on an Apparently Undescribed Ulotrichalean Alga. (Illustrated 3¼ x 4)

9:13 *773.* HUTNER, S. H., Haskins Laboratories, New York. Carbohydrate Utilization by *Euglena gracilis.* (Illustrated 3¼ x 4)

9:26 *774.* PATRICK, RUTH, Philadelphia Academy of Science, Philadelphia. Diatoms of Bethany Bog. (Illustrated 3¼ x 4)

9:44 *775.* WHITFORD, L. A., North Carolina State College, Raleigh. Algae in the Giant Springs of Florida. (Illustrated 2 x 2)

9:57 *776.* DAILY, WILLIAM A., and J. M. McGUIRE, Lilly Research Laboratories. The Pyophilization of some Algae.

10:10 *777.* FOREST, HERMAN S., Knoxville, Tenn. First Conclusions from a Jump at *Stigeoclonium.* (Illustrated, opaque projector)

10:23 *778.* WILLIAMS, ROBERT H., Marine Laboratory, University of Miami. Tropical Marine Algae. (Illustrated 16 mm.)

10:38 *779.* STARR, RICHARD C., Indiana University. Heterothallism in *Cosmarium botrytis* var. *subtumidum* Wittr. (Illustrated 2 x 2)

10:53 *780.* ALLEN, ANN, Indiana University. A Preliminary Report on a Cytological Investigation in *Spirogyra.* (Illustrated 2 x 2)

11:04 *781.* DAILY, FAY KENOYER, Butler University. A Rare *Palypella* new to the U. S. (Illustrated 3¼ x 4)

11:17 *782.* OPHEL, IVAN L., Atomic Energy of Canada, Chalk River, Ontario. New and Interesting Algae from South Australia. (Illustrated 3¼ x 4)

TUESDAY AFTERNOON, SEPTEMBER 7

Contributed papers. ***Room 239, Administration Building.***

1:30 *783.* ROACH, A. W., and J. K. G. SPIVEY, North Texas State College. Some Interrelationships of Algae and Aquatic Actinomycetes. (Illustrated 16 mm.)

1:45 *784.* EYSTER, CLYDE, Charles F. Kettering Foundation. Relativerate Growths of *Chlorella* and *Nostoc*. (Illustrated 3¼ x 4, 2 x 2)

2:00 *785.* ALLEN, M. B., University of California, Berkeley. General Features of Algal Growth in Sewage Oxidation Ponds. (Illustrated 3¼ x 4)

2:23 *786.* CONOVER, JOHN T., Oceanographic Institute, Woods Hole, and JOHN L. BLUM, Canisius College, Buffalo. The Coastal *Vaucheria* Belt. (Illustrated 2 x 2)

2:47 *787.* PALMER, C. MERVIN, Robert A. Taft Engineering Center, Cincinnati. Species of the Fresh-water Red Algae *Sacheran* in North America. (Illustrated 3¼ x 4)

3:00 *788.* PROVASOLI, LUIGI, and IRMA J. PINTNER, Haskins Laboratory, New York. Culture of *Trachelomonas* in Chemically Defined Media. (Illustrated 3¼ x 4)

3:10 *789.* WALLACE, NATALIE MONG, Philadelphia Academy Science. The Ecological Sign of Growth Rates in Fresh-water Diatoms. (Illustrated 3¼ x 4)

3:28 *790.* WALLACE, JOHN H., Philadelphia Academy Science. Effect of Day Length on Diatom Population in a Small Stream. (Illustrated 3¼ x 4)

Read by title.

791. NIELSEN, C. S., and GRACE C. MADSEN, Florida State University. Florida Scytonemataceae.

4:00 **Business meeting** of the Phycological Society.

WEDNESDAY MORNING, SEPTEMBER 8

Field Trip to fresh water habitats south of Gainesville: Rainbow Springs, Crystal River, Homosassa Springs. Leader: L. A. Whitford, Department of Botany, N. C. State College, Raleigh, N. C.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

15. SOCIETY FOR INDUSTRIAL MICROBIOLOGY

The Society of Industrial Microbiologists was organized in December 29, 1949 in New York City. At Columbus, Ohio, September 13, 1950, the name was changed to the Society for Industrial Microbiology. Its object is to bring together those who are interested in the various phases of microbiology as applied to industrial materials and processes. It encompasses certain borderline phases between biology, chemistry, and engineering, relative to deterioration of materials by microbiological attack and its prevention, microbiologic manufacturing, microbiologic assay, marine biology, sanitary engineering, and the like. Total membership, 231.

President: JAMES G. HORSFALL, Connecticut Agricultural Experiment Station, New Haven, Conn.
Secretary: C. L. PORTER, Purdue University, Lafayette, Indiana.
Local Committee Representative: S. BLOCK.

MONDAY MORNING, SEPTEMBER 6

Section I. Deterioration. ***Browsing Room, Main Library.***

Symposium: Microbiological Deterioration. Part I. IRA HATFIELD, presiding.

8:00 *792.* STAHL, WILLIAM H., HELMUT PESSEN, and LADISLAV BOOR, Quartermaster Research and Development Center, Natick, Mass. Developments in Protection Again Microbiological Degradation of Plastics and Plasticizers. (Illustrated 3¼ x 4)

8:45 *793.* DAHL, SVERRE, National Bureau of Standards, Washington, D. C. Prevention of Microbiological Deterioration of Leather.

9:30 *794.* ALLRED, RAY C., Tretolite Company, Division of Petrolite Corp., Webster Groves 19, Missouri. The Control of Microorganisms in Water Used for Secondary Oil Recovery. (Illustrated 3¼ x 4)

10:15 *795.* HIMMELFARB, DAVID, U. S. Navy Ropewalk, Boston Naval Shipyard, Boston, Mass. Mildew Resistant Cordage. (Illustrated 3¼ x 4)

This Symposium will be continued Tuesday afternoon, September 7.

MONDAY NOON, SEPTEMBER 6

12:00 **Luncheon.** ***Student Service Center Dining Room.*** **Business Meeting** to follow luncheon.

MONDAY AFTERNOON, SEPTEMBER 6

Section II. Antibiotics. *Browsing Room, Library.*

Symposium. Microbial Populations and the Selection of Antibiotic-Producing Microorganisms. B. M. DUGGAR, presiding.

2:15 *796.* McGUIRE, J. M., Eli Lilly & Company, Indianapolis, Ind. Some Areas of Interest in the Search for New Antibiotics.

3:00 *797.* CURTIS, J. T., University of Wisconsin, Madison, Wis. Ecological Interrelations of Soil Microfungi and Vegetation. (Illustrated 2 x 2)

3:45 *798.* PORTER, C. L., and K. S. WILSON, Purdue University, West Lafayette, Ind. Problems Associated with the Investigation of Microbiological Antagonism Occurring in Muck Soils.

MONDAY EVENING, SEPTEMBER 6

7:00 **Banquet, *Gainesville Golf and Country Club.*** Bus will leave from Broward Hall at 6:30. Speaker: JAMES G. HORSFALL, President, "Fun with Fungicides."

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

Section I. Deterioration. *Browsing Room, Library.* GLENN A. GREATHOUSE, presiding.

8:00 *799.* REYNOLDS, ERNEST S., Marine Laboratory, University of Miami, Miami, Florida. Mold Strains Requiring High Concentration Media, as a New Group of Deterioration Organisms. (Illustrated 3¼ x 4)

8:20 *800.* DAY, DOROTHY, 2 Gesner Avenue, South Nyack, N. Y. Plastics in Petri Dishes with Porous Clay Covers. (Illustrated 2 x 2)

8:50 *801.* TEITELL, LEONARD, and ANNETTE KRAVITZ, Pitman-Dunn Laboratories, Frankford Arsenal, Philadelphia 37, Pa. Testing of Volatile Fungitoxic Materials. (Illustrated 3¼ x 4)

9:10 *802.* WEST, BILLY, and F. T. WOLF, Vanderbilt University, Nashville, Tenn. The Mechanisms of Action of the Fungicide 2-Heptadecyl-2-Imidazoline.

9:30 *803.* BLOCK, S. S., University of Florida, Gainesville, Fla. What I Don't Know about Copper-8-Quinolinolate. (Illustrated 3¼ x 4)

10:10 *804.* YEAGER, CHARLES C., Scientific Oil Compounding Co., Inc., 1637 S. Kilbourne Avenue, Chicago 23, Ill. Industrial Fungicides, Novel Biologics of Commerce. (Illustrated 2 x 2)

TUESDAY AFTERNOON, SEPTEMBER 7

Section II. Antibiotics. *Browsing Room, Library.* JOHN N. PORTER, presiding.

1:30 *805.* SCHERR, GEORGE H., Creighton University School of Medicine, Omaha, Nebr. A Multi-tipped Disc for Determining Microbial Sensitivity to Antibiotics and Other Chemotherapeutic Agents. (Illustrated 3¼ x 4)

2:00 *806.* WILSON, K. S., and C. L. PORTER, Purdue University, West Lafayette, Ind. The Fate of *Verticillium albo-atrum* R. & B. in Muck Soils as Affected by Various Species of Fungi.

2:30 *807.* PORTER, J. N., N. DEDUCK, N. BOHONOS, and J. H. WILLIAMS, Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y. Some *in vitro* and Fermentation Studies on Puromycin. (Illustrated 3¼ x 4)

3:00 *808.* MILLER, BRINTON M., and C. L. PORTER, Purdue University, West Lafayette, Ind. Antibiotics Produced by Members of the Mucorales. I. Preliminary Antibiotic Survey of 150 Species.

Section III. Symposium. Microbiological Deterioration. Part II. *Room 405, Main Library.* LEONARD TEITELL, presiding.

1:00 *809.* SHEMA, B. F., Institute of Paper Chemistry, Appleton, Wis. Microbiological Deterioration of Pulp and Paper.

1:45 *810.* CRANDALL, H. C., Mosinee Paper Mills Company, Mosinee, Wis. Fungus Proofing of Paper and Paperboard.

2:30-5:00 Other titles in this symposium will be announced in the mimeographed program which will be available at the meeting.

WEDNESDAY MORNING, SEPTEMBER 8

General Division, joint with the Mycological Society of America. *Browsing Room, Library.* FREDERICK T. WOLF, presiding.

8:00 *811.* PRATT, DARRELL B., JOHN BORING, and W. H. RILEY, University of Florida, Gainesville, Fla. Regulation of Sodium Chloride Tolerance of Marine Bacteria by Potassium Ion Concentration.

8:20 *812.* MORGAN, G. B., E. R. HENDRICKSON, and T. W. STEARNS, University of Florida, Gainesville, Fla. A Rapid Determination of the Biochemical Oxygen Demand. (Illustrated 3¼ x 4)

8:40 *813.* BLOCK, S. S., and E. A. J. WARSHYK, University of Florida, Gainesville, Fla. A Versatile, Low-cost Laboratory Shaker. (Illustrated 3¼ x 4)

9:05 *814.* GREATHOUSE, GLENN A., National Research Council, Washington, D. C. C^{14}-Cellulose as a Tool in the Studies of Microbiological Deterioration of Materials.

9:35 *815.* HORSFALL, JAMES G., and SAUL RICH, Connecticut Agricultural Experiment Station, New Haven, Conn. Effect of Fungicides on Sporulation of *Sclerotinia.*

10:05 *816.* BLOCK, S. S., R. L. STEPHENS, A. BARRETO, and W. A. MURRILL, University of Florida, Gainesville, Fla. Chemical Identification of the Amanita Toxin in Mushrooms.

10:25 *817.* STEPHENS, R. L., and T. W. STEARNS, University of Florida, Gainesville, Fla. Studies on the Metabolism of *Ashbya gossypii.* (Illustrated 3¼ x 4)

10:45 *818.* PORTER, C. L., Purdue University, West Lafayette, Ind. Mycology in Europe.

WEDNESDAY AFTERNOON, SEPTEMBER 8

1:30 **Business Meeting.** ***Browsing Room, Library.***

Fermentation Division. ***Browsing Room, Library.*** O. G. WEGRICH, presiding.

2:00 *819.* MOORE, BURTON H., Anheuser-Busch, Inc., St. Louis, Mo. A Laboratory Culture Assembly for Cultivation of Yeasts and Other Aerobic Microorganisms. (Illustrated 3¼ x 4)

2:15 *820.* DULANEY, EUGENE L., E. O. STAPLEY, and KATHERINE SIMPF, Merck and Company, Rahway, N. J. Studies on Ergosterol Production by Yeasts.

2:35 *821.* OLDSHUE, J. Y., Mixing Equipment Co., Inc., Rochester 11, N. Y. The Role of Mixing in Biological Processes. (Illustrated 2 x 2, 16 mm. movie)

3:20 *822.* KAROW, E. O., Merck and Company, Rahway, N. J. The Effect of Agitation on Fermentation Processes.

4:05 *823.* OLDSHUE, J. Y., Mixing Equipment Co., Inc., Rochester 11, N. Y. "Fluid Mixing." (Color and sound movie)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

16. SOCIETY OF PROTOZOOLOGISTS

The Society of Protozoologists was organized December 29, 1947, at Chicago, Illinois. The objectives of the Society are closer association of workers in protozoology and the advancement of protozoology. Total membership, 455.

President: DAVID H. WENRICH, University of Pennsylvania, Philadelphia, Pa.
Vice-President: WILLIAM F. DILLER, University of Pennsylvania, Philadelphia, Pa.
Secretary: NORMAN D. LEVINE, University of Illinois, Urbana, Ill.
Treasurer: REGINALD D. MANWELL, Syracuse University, Syracuse, N. Y.
Local Committee Representative: J. V. SLATER.

Room 218, Florida Union, has been reserved for the entire convention period for the use of the Society of Protozoologists for council and committee meetings.

Program of the Sixth Annual Meeting

MONDAY MORNING, SEPTEMBER 6

Contributed papers. ***Room 104, Floyd Hall.*** DAVID H. WENRICH, presiding.

9:00 *824.* GABEL, J. RUSSEL, Fisk University, Nashville, Tenn. Protozoa from the Mountain Marmot, *Marmota flaviventris.*

9:20 *825.* CORLISS, JOHN O., Yale University, New Haven, Conn. Review of the Genus *Glaucoma* Ehrenberg, 1830 (Family Tetrahymenidae).

9:37 *826.* BONORRIS, JIM and GORDON H. BALL, University of California, Los Angeles, Calif. A Haemogregarine from Southern California Lizards.

9:57 *827.* TRAGER, WILLIAM, The Rockefeller Institute for Medical Research, New York, N. Y. Coenzyme A and the Malaria Parasite, *Plasmodium lophurae.*

10:17 *828.* SCHOENBORN, H. W., and R. J. GIBSON, University of Georgia, Athens, Ga. Biochemical Mutations in *Astasia longa.*

10:32 *829.* COSGROVE, WILLIAM B., State University of Iowa, Iowa City, Ia. Acid Production in Cultures of *Crithidia fasciculata.*

10:52 *830.* GRUCHY, DAVID F., University of Michigan, Ann Arbor, Mich. The System of Breeding Relations in *Tetrahymena pyriformis.*

11:12 *831.* ELLIOTT, ALFRED M., and ROBERT E. HAYES, University of Michigan, Ann Arbor, Mich. Search for Biochemical Mutation in *Tetrahymena.*

11:32 *832.* MANWELL, REGINALD D., Syracuse University, Syracuse, N. Y. Blood Parasites of 15 Species of Fringillidae.

11:49 *833.* SHOMAY, DAVID, University of Illinois, Urbana, Ill. The Structure and Life History of *Lagenophrys labiata* Stokes (Ciliata, Peritricha).

MONDAY AFTERNOON, SEPTEMBER 6

Contributed papers. ***Room 104, Floyd Hall.*** DAVID H. WENRICH, presiding.

2:00 *834.* BOVEE, EUGENE C., University of Houston, Houston, Texas. A Small Ameba of the Genus *Metachaos* Schaeffer.

2:20 *835.* BOVEE, EUGENE C., and BEN NEAL ADAMS, University of Houston, Houston, Texas. Lethal Infections of *Trypanosoma cruzi* in Cortisone-Treated White Mice.

2:40 *836.* DANIELS, EDWARD W., University of Chicago, Chicago, Ill. Effect of X-Rays on Survival and Cell Division in the Giant Amoeba, *Pelomyxa illinoisensis.*

2:53 *837.* DANIELS, EDWARD W., University of Chicago, Chicago, Ill. Therapeutic Effects of Nonirradiated Protoplasm after Microinjection into Lethally X-Irradiated *Pelomyxa illinoisensis* Cells.

3:05 *838.* MARQUARDT, WILLIAM C., University of Illinois, Urbana, Ill. The Morphology of *Tritrichomonas foetus, T. suis* and *Trichomonas gallinarum* under the Phase Contrast Microscope.

3:25 *839.* LEVINE, NORMAN D., and WILLIAM C. MARQUARDT, University of Illinois, Urbana, Ill. The Effect of Glycerol on Survival of *Tritrichomonas foetus* at Freezing Temperatures.

3:45 *840.* DUCOFF, HOWARD S., Argonne National Laboratory, Lemont, Ill. Enhancement of Radiosensitivity by Interference with Certain Phases of Metabolism.

4:00 *841.* SEDAR, ALBERT W., and KEITH R. PORTER, The Rockefeller Institute for Medical Research, New York, N. Y. The Fine Structure of the Cortical Components of *Paramecium multimicronucleatum.*

4:20 *842.* SPRAGUE, VICTOR, Lake Chatuge Biological Laboratory. Studies on Morphology and Life Cycle of *Nematopsis prytherchi* Sprague and *N. ostrearum* Prytherch.

4:40 *843.* BAKER, H., E. RODRIGUEZ, S. AARONSON, and S. H. HUTNER, Haskins Laboratories, New York, N. Y. Nutrients Required for Growth of *Ochromonas* at 37° C.

4:52 *844.* AARONSON, SHELDON, and EUGENE RODRIGUEZ, Queen's College, New York, N. Y. and Haskin's Laboratories, New York, N. Y. Fatty Acids as Substrates for *Ochromonas malhamensis.*

MONDAY EVENING, SEPTEMBER 6

6:30 **Executive Committee Dinner and Meeting.** ***Oak Room; Florida Union.***

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, *"The Passing of the Fleet."*

TUESDAY MORNING, SEPTEMBER 7

Contributed papers. ***Room 207, Administration Building.*** DAVID H. WENRICH, presiding.

9:00 *845.* EHRET, C. F., E. L. POWERS, and L. E. ROTH, Argonne National Laboratory, Lemont, Ill. On the Structure and Development of the Macronucleus in *Paramecium bursaria.*

9:20 *846.* POWERS, E. L., C. F. EHRET, and L. E. ROTH, Argonne National Laboratory, Lemont, Ill. Morphology of the Mitochondrion and its Relationship to Other Structures in *Paramecium.*

9:40 *847.* NATHAN, HELENE A., Haskins Laboratories, New York, N. Y. The Nutrition of *Herpetomonas culicis.*

9:53 *848.* NATHAN, HELENE A., and KIRSTEN W. CARSTEN, Haskins Laboratories, New York, N. Y. A Possible Hemin-Replacing Factor for *Crithidia oncopelti.*

10:05 *849.* SEAMAN, GERALD R., and MARY DELL NASCHKE, University of Texas Medical Branch, Galveston, Texas. Pyruvate Oxidation by Extracts of *Tetrahymena.*

10:25 *850.* CLAYTON, JOHN WESLEY, JR., University of Pennsylvania, Philadelphia, Pa. Patterns of Mitosis in the Genus *Spironympha* (Protozoa).

10:38 *851.* CLAYTON, JOHN WESLEY, JR., University of Pennsylvania, Philadelphia, Pa. Defaunation Studies on the Protozoa of *Reticulitermes flavipes.*

10:50 *852.* McCOWEN, MAX C., MAURICE E. CALLENDER, and THEODORE RENNELL, The Lily Research Laboratories, Indianapolis, Ind. The Use of Shaffer-Frye Medium in the Evaluation of Experimental Amebiasis.

11:05 *853.* WISE, DONALD L., New York University, New York, N. Y. Carbon Sources for *Polytomella caeca.*

11:25 *854.* HULL, ROBERT W., Northwestern University, Evanston, Ill. The Probable Synonymy of *Discophrya piriformis* Guilcher and *Podophrya collini* Root.

11:40 *855.* GILMAN, LAUREN C., University of Miami, Coral Gables, Fla. Occurrence and Distribution of Mating Type Varieties in *Paramecium caudatum.*

WEDNESDAY MORNING, SEPTEMBER 8

Contributed papers. ***Room 207, Administration Building.*** DAVID H. WENRICH, presiding.

9:00 *856.* COOLEY, NELSON R., Oklahoma A. & M. College, Stillwater, Okla. The Influence of Aureomycin, Polymyxin B and Terramycin upon Population Growth of *Tetrahymena pyriformis,* Strain W.

9:20 *857.* LUYET, B. J. and P. M. GEHENIO, St. Louis University, St. Louis, Mo. On the Action of Ethylene Glycol in Protecting Various Amoeboid Organisms Against Freezing Injury.

9:35 *858.* FINLEY, HAROLD E. and H. B. WILLIAMS, Howard University, Washington, D. C. Free Amino Acids in *Vorticella microstoma.*

9:55 *859.* RUDZINSKA, MARIA A. and KEITH R. PORTER, The Rockefeller Institute for Medical Research, New York, N. Y. The Origin and Fine Structure of the Brood-Pouch in *Tokophrya infusionum.*

10:15 *860.* MEGLITSCH, PAUL A., Drake University, Des Moines, Ia. Some Observations on *Euplotes woodruffi.*

10:30 *861.* SACHS, IRVING B., University of Illinois, Urbana, Ill. Factors Influencing Encystment and Excystment in *Pelomyxa illinoisensis* Kudo.

10:50 *862.* PROVASOLI, LUIGI and JOHN J. A. McLAUGHLIN, Haskins Laboratories, New York, N. Y. Fat-Soluble Requirements of a Colorless Marine Flagellate.

11:10 *863.* SAMUELS, ROBERT, School of Medicine, University of Colorado, Denver, Colo. Abnormal Division and Morphogenesis in *Tritrichomonas batrachorum.*

11:30 *864.* SACHS, IRVING B., University of Illinois, Urbana, Ill. The Chemical Nature of the Cyst Membranes of *Pelomyxa illinoisensis.*

WEDNESDAY AFTERNOON, SEPTEMBER 8

12:30-2:30 **Annual Luncheon and Business Meeting of the Society of Protozoologists.** ***Student Service Center.***

Past-President's Address. THEODORE L. JAHN, University of California, Los Angeles, Calif. "Adventures among the Flagellates."

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

Papers Read by Title.

865. SHOMAY, DAVID, University of Illinois, Urbana, Ill. The Natural History of *Lagenophrys labiata* Stokes (Ciliata, Peritricha).

866. CAINE, RUFUS L., State University of Iowa, Iowa City, Ia. A Morphologic and Taxonomic Study of the Enteric Protozoa of Leeches.

867. RITTER, EDWARD, Ohio State University, Columbus, Ohio. Cytoplasmic Structure and Cytochemistry of *Actinosphaerium eichhorni.*

868. ELLIOTT, ALFRED M., L. E. BROWNELL and J. A. GROSS, University of Michigan, Ann Arbor, Mich. The Use of *Tetrahymena* to Evaluate the Effects of Gamma Radiation on Essential Nutrilites.

869. GUTIERREZ, JOSE, State College of Washington, Pullman, Wash. Experiments on Holotrichs from the Bovine Rumen.

870. HARTIG, WILLIAM J., and DANIEL M. LILLY, St. John's University, Brooklyn, N. Y. Bacteria Free Cultures of *Paramecium caudatum.*

871. LILLY, DANIEL M., and FRANCIS J. STERBENZ, St. John's University, Brooklyn, N. Y. Aeration as a Factor in the Growth of Protozoa.

872. WEIS, DALE STERN, Yale University, New Haven, Conn. Observations on Size Reversibility in Cultures of *Tetrahymena pyriformis.*

873. GUILLARD, ROBERT R. L., Yale University, New Haven, Conn. A Vacuole-Less Variant of *Chlamydomonas moewusii* Requiring a High Osmotic Pressure for Survival.

874. CORLISS, JOHN O., Yale University, New Haven, Conn. Necrology (1940-1954) of Distinguished American Contributors to Protozoology.

875. CORLISS, JOHN O., Yale University, New Haven, Conn. Necrology (1940-1954) of Distinguished European Contributors to Protozoology.

876. BURSA, ADAM, New York, N. Y. *Schilleriella biseta* nov. spec., a Baltic Estuarine Xanthophycean.

877. BURSA, ADAM, New York, N. Y. On the Genus *Prorocentrum* Ehrenberg, 1883.

878. BURSA, ADAM, New York, N. Y. *Heterocalyx* nov. gen. *levantinoides* nov. spec., an Epiphytic Xanthophycean.

879. HERMAN, C. M., Patuxent Research Refuge, U. S. Fish & Wildlife Service, Laurel, Md., and D. L. PRICE, Army Medical Service Graduate School, Washington, D. C. Hepatozoon in Gray Squirrels, *Sciurus carolinensis.*

880. CORBETT, JOHN J., Lederle Laboratories and New York University, New York, N. Y. Formation of Thiamine by *Chilomonas paramecium.*

881. GROSS, J. A., University of California, Los Angeles, Calif. Comparative Study of the Effects of Antibiotics on Growth of *Tetrahymena.*

882. HULL, ROBERT W., Northwestern University, Evanston, Ill. The Occurrence of Suctoria in the Chicago Area.

883. EICHEL, HERBERT J., Hahnemann Medical College, Philadelphia, Pa. Purine-Metabolizing Enzymes of *Tetrahymena pyriformis.*

884. KITCHING, J. A., University of Bristol, England. Combined Effects of High Hydrostatic Pressure and Ethanol on Amoebae.

885. KITCHING, J. A., University of Bristol, England. Further Observations on the Expansion of the Cuticle of the Suctorian *Discophrya piriformis* Guilcher.

886. PADNOS, MORTON, SOPHIE JAKOWSKA and ROSS F. NIGRELLI, College of Mt. St. Vincent and New York Aquarium, New York, N. Y. Studies on Colpoda. IV. Reorganization of the Silverline System in *Colpoda maupasi* (Bensonhurst Strain).

887. JAKOWSKA, SOPHIE, College of Mount St. Vincent, New York, N. Y., ROSS F. NIGRELLI, New York Zoological Society, New York, N. Y. and IRWIN ALPERIN, New York State Conservation Department, Freeport, Long Island, N. Y. A New *Henneguya* in the North Atlantic Weakfish, *Cynoscion regalis.*

888. HALL, R. P., New York University, New York, N. Y. Comparative Growth-Responses to Calcium and Magnesium in *Tetrahymena pyriformis.*

889. HONIGBERG, BRONISLAW M., University of Massachusetts, Amherst, Mass. The Parabasal Apparatus of *Trichomonas vaginalis* Donné.

890. FINLEY, HAROLD E. and H. B. WILLIAMS, Howard University, Washington, D. C. Biological Activity of *Vorticella microstoma* Sex Attractants.

891. UKELES, RAVENNA, New York University, New York, N. Y. The Effect of Certain Analogues of Pantothenic Acid on Growth of *Chilomonas paramecium.*

892. COOLEY, NELSON R., Oklahoma A. & M. College, Stillwater, Okla. The Influence of Bacitracin, Chloramphenicol and Neomycin upon Population Growth of *Tetrahymena pyriformis,* Strain W.

893. MUSACCHIA, X. J. and MARTIN PASSAGLIA, St. Louis University, St. Louis, Mo. Effects of Glycerol on *Pelomyxa carolinensis* Wilson and *Panamicium aurelia* Ehrenberg.

17. SOCIETY FOR THE STUDY OF EVOLUTION

The Society for the Study of Evolution had its origin in an American Society for the Study of Speciation, organized in 1939 at the suggestion of Julian Huxley as a counterpart of the British society of the same name. The new Society for the Study of Evolution was organized in St. Louis in 1946 with the support and collaboration of the members of the Committee on Common Problems of Genetics, Paleontology and Systematics. The journal, *Evolution*, was begun in 1947 with the aid of a grant from the American Philosophical Society. Total membership, 928.

President: KARL P. SCHMIDT, Chicago Natural History Museum, Chicago, Ill.
Vice-Presidents: THEODOR JUST, Chicago Natural History Museum, Chicago, Ill.; LEE R. DICE, University of Michigan, Ann Arbor, Mich.; C. G. AGUAYO, Havana, Cuba.
Treasurer: CHARLES M. BOGERT, American Museum of Natural History, New York, N. Y.
Secretary: HARLAN LEWIS, University of California, Los Angeles, Calif.
Local Committee Representative: C. J. GOIN.

Room 212, Florida Union, has been reserved for the use of the Society for the Study of Evolution for council and small meetings.

Program of the Ninth Annual Meeting

MONDAY MORNING, SEPTEMBER 6

Contributed papers. *Room 207, Administration Building.* KARL P. SCHMIDT, presiding.

9:30 *894.* YOUNG, FRANK N., Indiana University, Bloomington, Ind. Variation in Relation to Isolation in the Genus *Polopinus* (Coleoptera: Tenebrionidae). (Illustrated 3¼ x 4)

9:45 *895.* STALKER, H. D., Washington University, St. Louis, Mo. Cytology of the Parthenogenetic Fly, *Lonchoptera dubia.* (Illustrated 3¼ x 4)

10:10 *896.* MICHENER, CHARLES D., and R. R. SOKAL, University of Kansas, Lawrence, Kan. A Quantitative Approach to a Problem in Classification. (Illustrated 3¼ x 4)

10:40 *897.* BLAIR, W. FRANK, University of Texas, Austin, Texas. Natural Interbreeding between Speciating Populations of Microhylid Frogs. (Illustrated 3¼ x 4)

11:05 *898.* HINTON, TAYLOR, University of California, Los Angeles, Calif. Multi-allelic Lethal Chromosomes in Wild Populations of *Drosophila melanogaster.* (Illustrated 3¼ x 4)

11:20 *899.* DYSON-HUDSON, V. R. (DEMEREC), Oxford University, England. The Ecology of Two British Species of the *obscura* group of *Drosophila.* (Illustrated 3¼ x 4¼)

MONDAY AFTERNOON, SEPTEMBER 6

4:00 **Council Meeting. *Room 212, Florida Union.***

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

9:30 **Joint meeting with the Society for Systematic Zoology and the American Society of Ichthyologists and Herpetologists. *Room 120, Law Building.*** KARL P. SCHMIDT, presiding.

Symposium: The Origin and Evolution of the Biota of Florida.

a. A. S. ROMER, Harvard University, Cambridge, Mass. Fossil History.
b. R. A. HOWARD, Harvard University, Cambridge Mass. Recent Flora.
c. T. H. HUBBELL, University of Michigan, Ann Arbor, Mich. Recent Fauna.

WEDNESDAY MORNING, SEPTEMBER 8

9:00 **Business Meeting** of the Society for the Study of Evolution. ***Room 203, Law Building.***

Contributed papers. *Room 203, Law Building.* KARL P. SCHMIDT, presiding.

9:30 *900.* STEINER, ERICH, University of Michigan, Ann Arbor, Mich. The Evolution of *Oenothera* in Middle America. (Illustrated 2 x 2)

9:45 *901.* LÖVE, ÁSKELL, University of Manitoba, Winnipeg, Canada. Foundations of Cytotaxonomy. (Illustrated 3¼ x 4)

10:10 *902.* VICKERY, ROBERT K., JR., University of Utah, Salt Lake City, Utah. The *Mimulus cardinalis* Complex (Scrophulariaceae). (Illustrated 2 x 2)

10:25 *903.* RUSSELL, NORMAN H., Grinnell College, Grinnell, Iowa. Variation Patterns in the Stemless White Violets. (Illustrated 3¼ x 4)

10:50 *904.* MENZEL, MARGARET Y., and META S. BROWN, Texas Agricultural Experiment Station, College Station, Texas. Compatibility Relationships of *Gossypium gossypioides.* (Illustrated 3¼ x 4)

11:05 *905.* PAULEY, SCOTT S., Cabot Foundation, Harvard University, Petersham, Mass. Natural Hybridization of Trembling and Largetooth Aspen. (Illustrated 2 x 2)

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House. *Broward Hall,*** lower lobby and terrace.

18. SOCIETY OF SYSTEMATIC ZOOLOGY

The Society of Systematic Zoology was founded in 1947 at Chicago. Although the Society was organized in the United States, its intended scope is not national but international. It has as its aims the elaboration of basic principles of systematics as well as serving as a forum for the discussion of methods and problems. The Society publishes the journal *Systematic Zoology* and the newsletter, *SSZ News*. Total membership, 1,100.

President: H. W. STUNKARD, New York University, New York, N. Y.
President-Elect: L. M. KLAUBER, San Diego Society of Natural History, San Diego, Calif.
Secretary-Treasurer: R. E. BLACKWELDER, U. S. National Museum, Washington, D. C.
Local Committee Representative: L. BERNER.

MONDAY MORNING, SEPTEMBER 6

Session I. *Room 332, Administration Building.*

9:30 *906.* ARNETT, ROSS H., JR., U. S. National Museum, Washington, D. C. Natural Species and Systematic Species. (Illustrated 2 x 2)

9:50 *907.* MEGLITSCH, PAUL A., Drake University, Des Moines, Iowa. Non-morphological Traits in the Taxonomy of Myxosporidia.

10:00 *908.* YOUNG, FRANK N., Indiana University, Bloomington, Ind. The Problem of Subspecific Variation in Aquatic Coleoptera. (Illustrated 3¼ x 4)

10:15 *909.* PETERS, JAMES A., Brown University, Providence, Rhode Island. A Proposed Method of Bringing the 10th Edition of the *Systema Naturae* up to Date.

10:25 *910.* WALLACE, H. K., University of Florida, Gainesville, Florida. Variations in *Phidippus audax* (Hentz). (Aranae, Salticidae) (Illustrated 2 x 2)

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida. "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

8:00 **Breakfast. *Oak Room, Florida Union.***

9:30 **Joint Meeting with the Society for the Study of Evolution and the American Society of Ichthyologists and Herpetologists. *Room 120, Law Building.***

Symposium: The Origin and Evolution of the Biota of Florida.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House. *Broward Hall,*** lower lobby and terrace.

19. AMERICAN FERN SOCIETY

The American Fern Society came into being in 1893, when it was organized as the Linnaean Fern Chapter of the Agassiz Association. Its purpose from the start has been the affiliation of all interested in the study of ferns. *The American Fern Journal,* official publication of the society, is a quarterly, now in its forty-fourth volume. Total membership, 500.

President: RALPH BENEDICT, Brooklyn College, Brooklyn, N. Y.
Secretary: MILDRED FAUST, Syracuse University, Syracuse, N. Y.
Local Committee Representative: JOHN BECKNER.

WEDNESDAY, SEPTEMBER 1

1:30 **Field Trip No. 1,** beginning at the University of Miami, Dept. of Botany. Arriving Gainesville, September 4th.
Leader: JOHN BECKNER, 736 Myrtle Way South. St. Petersburg, Fla. Reservations must be made by August 15th.

MONDAY MORNING, SEPTEMBER 6

9:00 **Contributed papers. *Room 331, Administration Building.***

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies. *Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida. "*The Passing of the Fleet.*"

WEDNESDAY, SEPTEMBER 8

1:00 **Field Trip No. 2,** beginning at Gainesville, from the Florida Union Annex.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House. *Broward Hall,*** lower lobby and terrace.

THURSDAY, SEPTEMBER 9

8:30 **Field Trip No. 3,** beginning at Gainesville, from the west side of Broward Hall.

20. AMERICAN SOCIETY OF NATURALISTS

The American Society of Naturalists was organized at Springfield, Massachusetts in 1883 as the Society of Naturalists of the Eastern United States. The name was changed to the present title in 1885. Objectives are the discussion, advancement, and diffusion of knowledge concerning the broader biological problems, including organic evolution; thus serving to correlate the various biological sciences into a common philosophy of biology. Total membership, 629.

President: M. DEMEREC, Carnegie Institution, Cold Spring Harbor, N.Y.
Vice-President: RALPH W. CHANEY, University of California, Berkeley, Calif.
Treasurer: CARL P. SWANSON, Johns Hopkins University, Baltimore, Md.
Secretary: WARREN P. SPENCER, Wooster College, Wooster, Ohio.
Representative to the AIBS Governing Board: CLAY G. HUFF, Navy Medical Center, Bethesda, Md.
Local Committee Representative: F. H. HULL.

MONDAY AFTERNOON, SEPTEMBER 6

1.30 **Business meeting** of the American Society of Naturalists. ***Room 104, Law Building.***

2:00 **Symposium: The Origin of the Biota of Middle America.** ***Room 104, Law Building.*** M. DEMEREC, presiding.

a. AARON J. SHARP, University of Tennessee. The Mexican Flora and Its Origin.

b. PAUL S. MARTIN, University of Michigan. The Ecological Distribution of Vertebrates in a Mexican Cloud Forest.

c. PIERCE BRODKORB, University of Florida. The Mexican Avifauna and Its Origin.

d. COLEMAN J. GOIN, University of Florida. Evolution of Some West Indian Frogs.

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, *"The Passing of the Fleet."*

TUESDAY EVENING, SEPTEMBER 7

8:30 **Presidential Address.** ***Room 207, Leigh Hall.*** M. DEMEREC, Carnegie Institution, Cold Spring Harbor, N. Y. "What is a Gene?"—Twenty Years Later.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

21. NATURE CONSERVANCY

The work of Nature Conservancy began in 1917 as a committee of the Ecological Society of America. In 1950 the name was changed to its present one but it continued to maintain close contact with all organizations working in conservation. The group holds membership in the Natural Resources Council of America and the International Union for the Protection of Nature. The Conservancy sends its *Nature Conservancy News* to all members and to many cooperators.

President: RICHARD H. POUGH, American Museum of Natural History, New York, N.Y.
Vice-President: S. CHARLES KENDEIGH, University of Illinois, Urbana, Ill.
Secretary: HERBERT C. HANSON, Catholic University of America, Washington, D.C.
Treasurer: JOSEPH J. HICKEY, University of Wisconsin, Madison, Wis.
Executive Director: GEORGE B. FELL, 607 G Street, S.E., Washington, D.C.
Local Committee Representative: J. C. DICKINSON.

SUNDAY EVENING, SEPTEMBER 5

8:00 **Council Meeting.** ***Room 206, Administration Building.***

MONDAY NOON, SEPTEMBER 6

12:00 **Luncheon.** ***Social Room, Florida Union.***

MONDAY EVENING, SEPTEMBER 6

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, *"The Passing of the Fleet."*

TUESDAY MORNING, SEPTEMBER 7

9:00 **Business Session.** ***Room 102, Business Administration Building.***

TUESDAY AFTERNOON, SEPTEMBER 7

2:00 Invited Speaker, CHARLES H. WHARTON, University of Florida. "The Wild Cattle of Cambodia." (Illustrated 16 mm. movie) ***Room 238, Administration Building.***

3:00 **Progress and Problems in Natural Area Conservation.** ***Room 238, Administration Building.***

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

22. PHI SIGMA

Phi Sigma was organized as a National Honorary Biological Society at Ohio State University, March 17, 1915. Membership is composed of outstanding students majoring in the Biological Sciences. The purpose of the society is to promote and encourage research and to foster a closer relationship between students and faculty. There are currently 31 active and 12 inactive chapters which have a combined membership of 14,727.

The governing board is composed of an Honorary President, Dr. Laurence H. Snyder; a Chancellor, Dr. Karl F. Lagler; a Past Chancellor, Dr. Arthur I. Ortenburger; a Vice Chancellor, Mr. Erwine H. Stewart; an Executive Secretary, Dr. Fred S. Orcutt; and a Treasurer, Professor Tema S. Clare.

Sigma Chapter, acting as host for the meetings, was the tenth chapter to be organized. It was granted charter December 4, 1925, with the late Dr. Robert Clifton Rhodes officiating. The chapter has grown from 13 charter members to an active enrollment totaling 47 students and faculty.

Local Committee Representative: P. H. SENN.

SUNDAY EVENING, SEPTEMBER 5

6:30 **Box Supper,** ***College Park*** (on campus). During the evening an open forum on the ecology of Florida will be held.

MONDAY MORNING, SEPTEMBER 6

9:00 **General Meeting.** ***Room 16, Business Administration Building.***

MONDAY AFTERNOON, SEPTEMBER 6

2:00 **Special Committee Meetings.** ***Rooms 14, 102, 105 and 108, Business Administration Building.***

MONDAY EVENING, SEPTEMBER 6

6:30 **Dinner.** ***Primrose Grill.***

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY MORNING, SEPTEMBER 7

9:00 **General Meeting.** ***Room 16, Business Administration Building.***

TUESDAY EVENING, SEPTEMBER 7

8:00 **Concluding Business Meeting.** ***Room 16, Business Administration Building.***

WEDNESDAY MORNING, SEPTEMBER 8

8:00 **All-day Field Trip,** by bus, to Silver Springs, Ocala National Park. Departure from Florida Union.

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House,** ***Broward Hall,*** lower lobby and terrace.

The Biologists' Smoker will be an event of Wednesday evening, September 8th. Arrange to meet your friends there. Place: Broward Hall.

23. SIGMA DELTA EPSILON

Graduate Women's Scientific Fraternity

Sigma Delta Epsilon was founded at Cornell University in 1921. At present there are seventeen chapters in the organization and the membership is approximately 1,600. The object of this fraternity is to further interest in science, to provide a society for the recognition of women in science and to bring women together in fraternal relationships.

President: GLADYS EVERSON, University of California, Davis, Calif.
First Vice-President: EMILY WOLFF, Wellesley College, Wellesley, Mass.
Second Vice-President: ELVA S. MEYER, University of Wisconsin, Madison, Wis.
Secretary: MARY GOJDICS, Barat College, Lake Forest, Ill.
Treasurer: TERESA COHEN, Penn State University, State College, Pa.
Local Committee Representative: H. LEWIS (FSU).

Room 4, Business Administration Building, has been reserved for the use of Sigma Delta Epsilon for council and committee meetings.

Program for the Thirty-Third Annual Meeting

MONDAY EVENING, SEPTEMBER 6

7:00 **National Council and Board of Directors Meeting.** ***Room 4, Business Administration Building.***

9:00 **General Meeting for all Participating Societies.** ***Florida Gymnasium.*** H. BENTLEY GLASS, Chairman of the A.I.B.S. Governing Board, presiding. Address by A. F. CARR, JR., University of Florida, "*The Passing of the Fleet.*"

TUESDAY NOON, SEPTEMBER 7

12:00 **Luncheon for all Women in Science.** ***Social Room, Florida Union.*** Speaker: DR. MARY L. WILLARD, Pennsylvania State University. "Chemistry and Criminalistics."

TUESDAY AFTERNOON, SEPTEMBER 7

4:00 **Tea and Conversation Time** for all Members. ***Bryan Lounge, Florida Union.***

WEDNESDAY MORNING, SEPTEMBER 8

8:00 **Breakfast and Grand Chapter Meeting.** ***Social Room, Florida Union.***

WEDNESDAY EVENING, SEPTEMBER 8

9:00 **Biologists' Smoker and Open House.** ***Broward Hall,*** lower lobby and terrace.

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